REDW2009

Revision 1.0, Jan. 10/2010 Prepared by: David M. Hiemstra dave.hiemstra@mdacorpoartion.com

Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose, X-xray, P-pions				Single Event Effects, H-heavy ion, P-proton, L-laser, N-neutrons							Displacement Damage		Facilities	Standard	Environment	Shielding
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons				
1, pp. 1-5	D. Hiemstra	Guide to the Radiation	Effects Data Workshop 2009																				
2, pp. 5-11	J. Bird	4N55	Optocoupler	Avago	√			√															
		LM119	Voltage Comparator	National Semiconductor	√		√	√															
		LM158	Operational Amplifier	National Semiconductor	√		√	√															
		LM158A	Operational Amplifier	National Semiconductor	√		√	√															
		AD620	Instrumentation Amplifier	Analog Devices	√			√															
		AD580LH	Voltage Reference	Analog Devices	√			√															
		AD588TQ	Voltage Reference	Analog Devices	√			√															
		AD1671	12 bit DAC	Analog Devices	√			√															
		OM1850	Low Dropout Voltage Regulator	International Rectifier	√			√															
		EL7457	Quad CMOS Driver	Intersil	√		√																
		OP400	Operational Amplifier	Analog Devices	√			√															
		AD630	Balanced Modulator/Demodulator	Analog Devices	√			√															
		2N3019	NPN Transistor	Microsemi	√			√															
3, pp. 12-14	J. Bird	PA07	Power Operational Amplifier	Apex	√										√H								
		REF02	Voltage Reference	Analog Devices	√							√H											
		IS-2981	8-Channel Source Driver	Intersil	√							√H											
		EL7457	Quad CMOS Driver	Intersil	√									√H									
4. pp. 15-24	M. O'Bryan	MAX997	Voltage Comparator	Maxim	√							√H		√H									
		DG390	Analog Switch	Maxim	√							√H		√H									
		SG1845	Pulse Width Modulator	Microsemi	√							√H		√H									
		SG1846	Pulse Width Modulator	Microsemi	√							√H		√H									
		AD822	Operational Amplifier	Analog Devices	√							√H											
		LM124	Operational Amplifier	National Semiconductor	√							√H											
		LM139	Operational Amplifier	Texas Instruments	√							√H											
		ADG526A	Analog Multiplexer	Analog Devices	√						√H			√H									
		UC1708	Power MOSFET Driver	Texas Instruments	√							√H											
		RH1086	Voltage Regulator	Linear Technology	√							√H		√H									
		RI1773	Power MOSFET Driver	International Rectifier	√							√H		√H									
		APT50M38PLL	Power MOSFET	Microsemi	√											√H							
		IRH7250	Power MOSFET	International Rectifier	√											√H							
		AFL12028	DC-DC Converter	International Rectifier	√							√H		√H									
		ADC14155W-MLS	14 bit ADC	National Semiconductor	√							√H		√H									
		ADS5424	14 bit ADC	Texas Instruments	√						√H,P		√H	√H									
		MT29F4G08AAAWP	4 Gbit Flash	Micron	√						√H			√H									
		K9F4G08U0A	4 Gbit Flash	Samsung	√						√H			√H									
		EDS5108ABTA	SDRAM	Eplidia	√						√H	√H		√H									
		Test Structure	SRAM	IBM	√						√H			√H									
		Test Structure	SRAM	IBM	√						√H,P												
		Test Structure	SRAM	Texas Instruments	√						√H,P			√H									
		XC4VLX25-10FF668	FPGA	Xilinx	√						√H,P			√H									
		MAX367	Oscillator	Circuit Protector	√							√H											
		HMP1-155TRX	Fiber Optic Transceiver	Space Photonics	√						√P												
		ISC9803 and QWIP	ROIC	Indigo and GSFC	√							√P											
5. pp. 25-31	D. Cochran	AFL12028SX/CH	DC-DC Converter	International Rectifier	√			√															
		AD822	Operational Amplifier	Analog Devices	√			√															
		RM158	Operational Amplifier	National Semiconductor	√			√															
		ADG526A	Analog Multiplexer	Analog Devices	√		√																
		K9F8G08U0A	8 Gbit Flash	Samsung	√		√																
		MT29F4G08AAAWP	4 Gbit Flash	Micron	√		√																
		K9F8G08U0M	8 Gbit Flash	Samsung	√		√																
		MT29F4G08AAA	4 Gbit Flash	Micron	√		√																
		HY27UF084G2M	4 Gbit Flash	Hynix	√		√																
		MT29F4G08AAAWP	4 Gbit Flash	Micron	√		√																
		EDE1104AB-50-E	1 Gbit SDRAM	Eplidia	√				√														
		K4T1G044QA-ZCD5	1 Gbit SDRAM	Samsung	√				√														
		K9K8G08U0A	8 Gbit Flash	Samsung	√		√																
		UC1875JQMLV	PWM Controller	Texas Instruments	√		√																
		CD54HCT4046A	Phase Locked Loop	Texas Instruments	√		√																
		XPA-11	Prototype	AMIS	√		√																
		APT50M38JLL	Power MOSFET	Microsemi	√		√																
		2N5157	NPN Bipolar Transistor	Microsemi	√			√															
		Test Structure	SIRF Test Transistor	Xilinx	√		√																
		2N2907	PNP Bipolar Transistor	Microsemi	√		√																
		2N2222	NPN Bipolar Transistor	Microsemi	√		√																
			RadFET	NMRC	√		√																
		LM139	Voltage Comparator	National Semiconductor	√			√															
		TPS5420	Switching Regulator	Texas Instruments	√		√																
		RH1021CMH-5	Voltage Reference	Linear Technology	√			√															
		RH1021CMW-5	Linear Technology	Linear Technology	√			√															
		LP2951	Low Dropout Regulator	National Semiconductor	√			√															
		TPS79133	Low Dropout Regulator	Texas Instruments	√			√															
		MT9T001P12STC	CMOS Imager	Micron	√				√														
		KAC9628	CMOS Imager	Kodak	√				√														
6. pp. 32-38	A. Aaron	AD5670	8 bit ADC	Analog Devices	√		√	√															
		AD670	8 bit ADC	Analog Devices	√		√	√															
		AD574	12 bit ADC	Analog Devices	√		√	√															
		LTC1417	14 bit ADC	Linear Technology	√		√	√															
		LTC1419	14 bit ADC	Linear Technology	√		√																
		LTC1604	16 bit ADC	Linear Technology	√		√																
		LTC1608	16 bit ADC	Linear Technology	√		√																
		AD8138	Differential ADC Driver	Analog Devices	√		√	√															
		AD7714	24 bit ADC	Analog Devices	√		√																
		LS2812D	DC-DC Converter	International Rectifier	√		√	√															
		LS2805S	DC-DC Converter	International Rectifier	√		√	√															
		LS2803R3S	DC-DC Converter	International Rectifier	√		√	√															
		LS2805R3S	DC-DC Converter	International Rectifier	√			√															
		LS2805S	DC-DC Converter	International Rectifier	√		√																
		LS2812D	DC-DC Converter	International Rectifier	√			√															
		LF198	Sample and Hold	National Semiconductor	√		√	√															
		2N3700	NPN Bipolar Transistor	Semicoa	√		√																
		2N3700	NPN Bipolar Transistor	ST Microelectronics	√		√																
		2N3700	NPN Bipolar Transistor	New England Micro	√		√																
		AD832	Operational Amplifier	Analog Devices	√			√															
		LT1211	Operational Amplifier	Linear Technology	√			√															
		LM124	Operational Amplifier	National Semiconductor	√		√	√															
		OP97	Operational Amplifier	Analog Devices	√			√															
		OP484	Operational Amplifier	GD	√			√															
		AD648	Operational Amplifier	Analog Devices	√		√	√															
		OP400	Operational Amplifier	Analog Devices	√		√																
		RH1498	Operational Amplifier	Linear Technology	√		√																
		RH1078	Operational Amplifier	Analog Devices	√			√															
		MC350272	Operational Amplifier	Motorola	√			√															
		RH1814	Operational Amplifier	Linear Technology	√			√															
		AD829	Operational Amplifier	Linear Technology	√			√															
		EDS5104ABTA-75	512 Mbit SDRAM	ELPIDA	√		√																
		RH119	Voltage Comparator	Linear Technology	√		√	√															
		LM193	Voltage Comparator	National Semiconductor	√		√	√															
		PM139	Voltage Comparator	Analog Devices	√			√															
		LP2951	Low Dropout Regulator	National Semiconductor	√			√															
		LP2953	Low Dropout Regulator	National Semiconductor	√			√	√														
		LM2941	Low Dropout Regulator	National Semiconductor	√		√	√	√														
		RH117	Voltage Regulator	Linear Technology	√		√	√															
		RH137	Voltage Regulator	Linear Technology	√			√	√														
		RH117	Voltage Regulator	Linear Technology	√			√															
		LM1577K	Switching Regulator	National Semiconductor	√		√	√															
		LP2953	Low Dropout Regulator	National Semiconductor	√			√															
		MAX708	Power Supply Supervisor	Maxim	√		√																
		UC1845	Pulse Width Modulator Controller	Texas Instruments	√			√															
		FZT458	NPN Bipolar Transistor	Zetex	√		√																
		FZT958	PNP Bipolar Transistor	Zetex	√		√																
		MRF901	NPN Bipolar Transistor	Motorola	√		√		√														
		LS401	JFET	Linear Systems	√		√																
		LSK398	JFET	Linear Systems	√		√																
		2N918	NPN Bipolar Transistor	AEI	√		√																
		2N3251A	PNP Bipolar Transistor	Microsemi	√		√																
		2N4391	JFET	Linear Systems	√		√																
		2N4393	JFET	Linear Systems	√		√																
		AD667	12 bit ADC	Analog Devices	√		√	√															
		DAC8413	12 bit DAC	Analog Devices	√			√															
		OMH3040	Hall Effect Switch	Optek	√		√	√															
		AD537	Voltage to Frequency Converter	Analog Devices	√		√	√															
		RTSX72SU	FPGA	Actel	√		√																
		IDTQS4A210	Multiplexer/DeMultiplexer	Integrated Device Technology	√		√																
		MAX306	Analog Multiplexer	Maxwell	√			√															
		AD590	Temperature Sensor	Analog Devices	√		√	√															
		LT1019	Voltage Reference	Linear Technology	√		√	√															
		LM113	Voltage Reference	National Semiconductor	√		√	√															
		LM136	Voltage Reference	National Semiconductor	√			√															
		AD652	Voltage to Frequency Converter	Analog Devices	√		√	√															
		AD606	Logarithmic Amplifier	Analog Devices	√		√	√															
		LMD18200	Full Bridge Driver	National Semiconductor	√		√	√															
		TC4423	Power MOSFET Driver	Microchip	√		√																
7. pp. 39-41	A. Tipton	AD7943	12 bit DAC	Analog Devices	√								√H	√H									
		AD9740	10 bit DAC	Analog Devices	√		√							√H									
		AD9705	10 bit DAC	Analog Devices	√		√						√H	√H									
		AD9763	10 bit DAC	Analog Devices	√		√																
		AD9911	Frequency Synhesizer	Analog Devices	√		√							√H									
		AD4252	Frequency Synhesizer	Analog Devices	√		√						√H	√H									
8. pp. 42-46	G. Chaumont	RHF43B	Operational Amplifier	ST Microelectronics	√		√	√				√H											
		RHF310	Operational Amplifier	ST Microelectronics	√		√	√				√H											
9. pp. 47-50	K. Kruckmeyer	LM136-2.5	Voltage Reference	National Semiconductor	√		√	√															
10. pp. 51-58	M. Alvarez	LM4132AMF-3.3	Voltage Reference	National Semiconductor	√		√																
		LM4128AMF-3.3	Voltage Reference	National Semiconductor	√		√	√															
		LM4129AIM5-3.3	Voltage Reference	National Semiconductor	√		√	√															
		LM4120AI5-1.8	Voltage Reference	National Semiconductor	√		√	√															
11. pp. 59-64	K. Kruckmeyer	LM2941WGRLQMLV	Voltage Reference	National Semiconductor	√		√	√															
12. pp. 65-70	K. Kruckmeyer	LM139AxLQMLV	Voltage Comparator	National Semiconductor	√							√H,L											
13. pp. 71-75	R. Lawrence	Test Structure	Trench Oxide Capacitor 90nm		√											√H							
14. pp. 76-81	L. Selva	2SK4217	Power MOSFET	Fuji Electric Drive Co.	√										√H	√H							
		2SK4152	Power MOSFET	Fuji Electric Drive Co.	√										√H	√H							
		2SK4155	Power MOSFET	Fuji Electric Drive Co.	√										√H	√H							
		2SK4158	Power MOSFET	Fuji Electric Drive Co.	√										√H	√H							
		2SK4217	Power MOSFET	Fuji Electric Drive Co.	√										√H	√H							
		2SK4152	Power MOSFET	Fuji Electric Drive Co.	√										√H	√H							
		2SK4155	Power MOSFET	Fuji Electric Drive Co.	√										√H	√H							
		2SK4158	Power MOSFET	Fuji Electric Drive Co.	√										√H	√H							
15. pp. 82-93	L. Scheick	IRHNJ597130	Power MOSFET	International Rectifier	√										√H	√H							
		IRHLF77110	Power MOSFET	International Rectifier	√										√H	√H							
		IRHNJ57133SE	Power MOSFET	International Rectifier	√										√H	√H							
		JANSR2N7498T2	Power MOSFET	International Rectifier	√										√H	√H							
		IRHMB57260SE	Power MOSFET	International Rectifier	√										√H	√H							
		IRHF7230	Power MOSFET	International Rectifier	√										√H	√H							
		IRHNJ57230	Power MOSFET	International Rectifier	√										√H	√H							
		IRHNA57264SE	Power MOSFET	International Rectifier	√										√H	√H							
		IRF9530PBF-ND	Power MOSFET	International Rectifier	√										√H	√H							
		IRF3315PBF-ND	Power MOSFET	International Rectifier	√										√H	√H							
		497-4339-5-ND	Power MOSFET	ST Microelectronics	√										√H	√H							
		IRHF7430SE	Power MOSFET	International Rectifier	√										√H	√H							
16. pp. 94-98	C. Oudea	MS8002	MEMS Accelerometer	Colybris	√				√			√H, P											
17. pp. 99-102	C. Poivey	SOIS	Optical Transceiver 1 Mbps	DAS Photonics	√		√		√			√ P											
		SOIS	Optical Transceiver 1 Mbps	DAS Photonics	√		√		√			√P											
18. pp. 103-105	R. Katti		1 Mb MRAM	Honeywell	√		√				√H												
19. pp. 106-113	J. Schaefer	KM44V16004AK-6	64Mb DRAM	Samsung		√			√	√	√H, P												
		KM44V16004BK-6	64Mb DRAM	Samsung		√			√	√	√H, P												
		KM44V16004DK-6	64Mb DRAM	Samsung		√			√	√	√H, P												
		KM44S32030AT-GL	128M DRAM	Samsung		√			√	√	√H, P												
		HM5225405BTT75	256M DRAM	Hitachi		√			√	√	√H, P												
20. pp. 114-122	T. Oldham	K9F4G08U0APCB0	4Gb Flash	Samsung	√		√				√H		√H	√H									
		MT29F4G08AAWP	4Gb Flash	Micron	√		√				√H		√H	√H									
21. pp. 123-126	R. Lawrence	Test Structure	512 kb SRAM	BAE Systems	√						√H, P												
22. pp. 127-132	R. Koga	uPD4382322	8 Mb SRAM	NEC	√		√				√H, P		√H, P	√H, P									

		IDT71V67603	9 Mb SRAM	Integrated Device Technology	√		√				√H, P		√H, P	√H, P						√			
		CY7C1360A	9 Mb SRAM	Cypress	√		√				√H, P		√H, P	√H, P									
23. pp, 133-135	D. Hiemstra	TMD320C6713	Digital Signal Processor	Texas Instruments	√				√		√P												
24. pp. 136-139	D. Admas	W28C0108	128KB EEPROM	Northrop Grumman Corp	√		√				√H			√H			√		√				
25. pp. 140-147	J. George	RTAX-2000S-CQ352E	FPGA	Actel	√				√		√H, P			√H									
26. pp. 148-151	C. Hafer	LEON 3FT	Microprocessor	Aeroflex Gaisler	√						√H												
27. pp. 152-156	M. Campola		RadFET	NMRC	√		√																
		Test Structure	SiRF Test Transistor	Xilinx	√		√																
		LM317	Voltage Regulator	Texas Instruments	√		√																
28. pp. 157-160	E. Blackmore		Large Area Neutron Beam	TRIUMF																√			
29. pp. 161-165	E. Cascio		Farady Cup	Francis H. Burr Proton Therapy																√			
30. pp. 166-173	A. Prokofiev		ANITA Neutron Source	The Svedlerg Laboratory																√			
Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.																							

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Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose, X-xray, P-pions				Single Event Effects, H-heavy ion, P-proton, L-laser, N-neutrons							Displacement Damage		Facilities	Standard	Environment	Shielding
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons				
1, pp. 1-4	D. Hiemstra	Guide to the Radiation	Effects Data Workshop 2006																				
2, pp. 5-10	D. Cochran	AD7821	8 bit ADC	Analog Devices	√			√															
		AD5334	8 bit DAC	Analog Devices	√			√															
		AFL2828SX/CH	DC-DC Converter	International Rectifier	√			√															
		SMSA2815S	DC-DC Converter	Interpoint	√			√															
		SMSA2815S	DC-DC Converter	Interpoint	√			√															
		RM124	Operational Amplifier	National Semiconductor	√			√															
		AD713S	Operational Amplifier	Analog Devices	√			√															
		52AC273	Logic	National Semiconductor	√			√															
		HY27UF084G2M	4Gbit Flash	Hynix	√			√															
		MT29F4G08AAAWP	4Gbit Flash	Micron	√			√															
		K9F4G08U0A	4Gbit Flash	Samsung	√			√															
		K9F4G08U0A	4Gbit Flash	Samsung	√			√															
		MR2A16ATS35CUOY	MRAM	Freescale	√			√															
		XC4VFX60	FPGA	Xilinx	√			√															
		AD549SH/883	Operational Amplifier	Analog Devices	√			√															
		MAX997	Voltage Comparator	Maxim	√			√															
		SR-ESAPMOS4/RAD	Dosimeter	National Mico Research Centre	√			√															
		SA8016	Fractional N Synthersizer	Philips	√			√															
		MIC4423	Power MOSFET Driver	Micrel	√			√															
		OMH3075S	Hall Effect Sensor	Optek Technologies	√			√															
		AD654	Voltage to Frequency Converter	Analog Devices	√			√															
3, pp. 11-20	M. O'Bryan	SIDECAR ASIC	ASIC	Teledyne	√								√H	√H									
		XC4VFX60	FPGA	Xilinx	√								√P	√P									
		UT6325	FPGA	Aeroflex	√						√H			√H									
		XC4VLX25	FPGA	Xilinx	√						√P		√H	√H,P									
		AFL2828	DC-DC Converter	Interpoint	√							√H		√H									
		TPS75003	Power Management IC	Texas Instruments	√							√H		√H									
		SMSA2815	DC-DC Converter	Interpoint	√							√H		√H									
		MSK5101	Voltage Regulator	MS Kennedy	√							√H											
		MAX997	Voltage Comparator	Maxim	√							√H											
		LM124	Operational Amplifier	National Semiconductor	√							√H											
		LMP2012	Operational Amplifier	National Semiconductor	√							√H											
		LM139	Voltage Comparator	Texas Instruments	√							√H											
		LM139	Voltage Comparator	National Semiconductor	√							√H											
		K4T1G044QA-ZCD5	1 Gbit DDR2 SDRAM	Samsung	√						√H, P		√H,P	√H									
		EDE1104AB-50-E	1 Gbit DDR2 SDRAM	Elpida	√						√H, P		√H, P	√H									
		MT47H128M8HQ-3E	1 Gbit DDR2 SDRAM	Micron	√						√H		√H	√H									
		R1LV1616RBG	SRAM	Renesas	√						√H		√H	√H									
		K9F4G08U0A	4 Gbit Flash	Samsung	√									√H,P									
		HY27UF084G2M	4 Gbit Flash	Hynix	√						√H		√H	√H									
		MT29F4G08AAAWP	4 Gbit Flash	Micron	√						√H		√H	√H									
		MR2A16A	4 Mbit MRAM	Freescale	√						√P												
		MB85R256	FRAM	Fujitsu Semiconductor	√						√H		√H	√H									
		FM22L16	FRAM	Ramtron International Corp.	√						√H		√H,P	√H,P									
		17302-001	EEPROM	Memtek	√						√H		√H	√H									
		SA8016	Synthesizer	Philips	√							√H	√H	√H									
		ADS5424	14 bit ADC	Texas Instruments	√						√H,P		√H	√H,P									
4. pp. 21-30	G. Allen	HI-507	Analog Multiplexer	Intersil	√									√H									
		ADG411	Analog Switch	Analog Devices	√									√H									
		DG202AEUE	Analog Switch	Maxim	√									√H									
		DG412AK	Analog Switch	Maxim	√									√H									
		DG413AK	Analog Switch	Maxim	√									√H									
		ISL43110	Analog Switch	Intersil	√									√H									
		AD9731	10 bit ADC	Analog Devices	√									√H									
		AD1672	12 bit ADC	Analog Devices	√									√H									
		AD9042	12 bit ADC	Analog Devices	√									√H									
		LTC1409	12 bit ADC	Linear Technology	√									√H									
		AD9240	14 bit ADC	Analog Devices	√									√H									
		AD9244	14 bit ADC	Analog Devices	√									√H									
		LTC1417	14 bit ADC	Linear Technology	√									√H									
		LTC1419AIG	14 bit ADC	Linear Technology	√									√H									
		AD977	16 bit ADC	Analog Devices	√									√H									
		ADS7809	16 bit ADC	Burr-Brown	√									√H									
		LTC1609	16 bit ADC	Linear Technology	√									√H									
		LTC1609	16 bit ADC	Linear Technology	√									√H									
		LTC1604	16 bit ADC	Linear Technology	√									√H									
		LTC1609	16 bit ADC	Linear Technology	√									√H									
		LTC1864	16 bit ADC	Linear Technology	√									√H									
		AD7714	24 bit ADC	Analog Devices	√									√H									
		CPPC7L-BP-1.2TST	Oscillator	Cardinal	√									√H									
		TCXO-5X7-12.0MHz	Oscillator	Cardinal	√									√H									
		VPC1-E3F	Oscillator	VITE Technology	√									√H									
		CD54HCT4046	Phased Locked Loop	Texas Instruments	√									√H									
		CDCV885	Phased Locked Loop Clock	Texas Instruments	√									√H									
		CY22392	Phased Locked Loop Clock	Cypress	√									√H									
		X9C503	8 bit DAC	Xicor	√									√H									
		AD8420	12 bit DAC	Analog Devices	√									√H									
		AD7541	12 bit DAC	Harris	√									√H									
		AD7245A	12 bit DAC	Analog Devices	√									√H									
		MAX539	12 bit DAC	Maxim	√									√H									
		LTC1595	16 bit ADC	Linear Technology	√									√H									
		AD768	16 bit ADC	Analog Devices	√									√H									
		LTC1650	16 bit ADC	Linear Technology	√									√H									
		ADSP-2100	Digital Signal Processor	Analog Devices	√									√H									
		ADSP-BF533	Digital Signal Processor	Analog Devices	√									√H									
		Stratix-II	FPGA	Altera	√									√H									
		Pro-ASIC Plus	FPGA	Actel	√									√H									
		Virtex-II	FPGA	Xilinx	√						√H		√H	√H									
		Viretx-4	FPGA	Xilinx	√						√H		√H	√H									
		UT63M147	1553 Transceiver	Aeroflex	√							√H		√H									
		26CTLV31	Differential Driver	Intersil	√							√H											
		SN55LBC174	Differential Driver	Texas Instruments	√							√H		√H									
		26CLV32RH	Differential Receiver	Intersil	√							√H											
		26CT32RH	Differential Receiver	Intersil	√							√H											
		SN55LBC175	Differential Receiver	Texas Instruments	√							√H		√H									
		SEN-5588	Power MOSFET Driver	Sensitron	√									√H									
		LTC1157	Power MOSFET Driver	Linear Technology	√									√H									
		TC4423	Power MOSFET Driver	Microchip	√									√H									
		NCS7S08	Logic	Fairchild	√									√H									
		CDCV304	Clock Buffer	Texas Instruments	√									√H									
		SN54LVTH244	Octal Buffer	Texas Instruments	√									√H									
		CY23FS08	Failsafe	Cypress	√						√H			√H									
		PPC750	Microprocessor	IBM	√						√H												
		PPC750	Microprocessor	IBM	√						√H												
		XPC750	Microprocessor	Motorola	√						√H												
		XPC750	Microprocessor	Motorola	√						√H												
		PPC7455	Microprocessor	Motorola	√						√H												
		PPC7455	Microprocessor	Motorola	√						√H												
		PPC750FX	Microprocessor	IBM	√						√H												
		PPC750FX	Microprocessor	IBM	√						√H												
		PPC7457	Microprocessor	Motorola	√						√H												
		PPC7447	Microprocessor	Motorola	√						√H												
		PPC7448	Microprocessor	Motorola	√						√H		√H										
		SPARCTSC695F	Microprocessor	Atmel	√						√H			√H									
		X9C503	Digital Potentiometer	Xicor	√									√H									
		AD7750	Voltage to Frequency Converter	Analog Devices	√									√H									
		LTC1387	RS-232/485 Transceiver	Linear Technology	√									√H									
		ADV7183B	SDTV Video Decoder	Analog Devices	√									√H									
		LTC1772	DC-DC Converter	Linear Technology	√									√H									
		MAX708	uP Supervisory Circuit	Maxim	√									√H									
		ADuM1404	Digital Isolator	Analog Devices	√									√H									
		ADT7461A	Digital Thermometer	Analog Devices	√									√H									
		DS1631	Digital Thermometer	Maxim	√									√H									
		TSS902E	Viterbi Decoder	Atmel	√									√H									
		IDT72V36110	FIFO	Integrated Device Technology	√									√H									
		OMH3040	Hall Effect Sensor	Optek	√						√H												
		AD9858	Direct Digital Synthesizer	Analog Devices	√						√H			√H									
		PSD4256G6V	Memory	ST Microelectronics	√									√H									
		AT25256AN	EEPROM	Atmel	√									√H									
		MT29F2G08AABWP	Flash	Micron	√						√H		√H										
		MT29F4G08AAAWP	Flash	Micron	√						√H		√H										
		HY27UF084G2B	Flash	Hynix	√						√H		√H										
			2 Gbit Flash	ST Microelectronics	√						√H		√H										
			1 Gbit Flash	Samsung	√						√H		√H										
			2 Gbit Flash	Samsung	√						√H		√H										
			4 Gbit Flash	Samsung	√						√H		√H										
			1 Gbit Flash	Intel	√						√H		√H										
			256 Mbit Flash	StrataFlash	√									√H									
		S29JL0643	Flash	Spansion	√						√H		√H										
		S29JL0644	Flash	Spansion	√						√H		√H										
		K9F2G08UOM	Flash	Samsung	√						√H												
		K9F2G08UOM	Flash	Samsung	√								√H										
		LTC2052	Operational Amplifier	Linear Technology	√									√H									
		LTC2052	Operational Amplifier	Linear Technology	√									√H									
		LMC6035	Operational Amplifier	National Semiconductor	√									√H									
		LMC6482	Operational Amplifier	National Semiconductor	√									√H									
		OP220	Operational Amplifier	Analog Devices	√							√H											
		OP27	Operational Amplifier	Analog Devices	√							√H											
		RH108AW	Operational Amplifier	Linear Technology	√							√H											
		TLC27M4	Operational Amplifier	Texas Instruments	√									√H									
		LMC6464	Operational Amplifier	National Semiconductor	√									√H									
		6N134	Optocoupler	Agilent Technologies	√							√H											
		HCPL-6250	Optocoupler	Agilent Technologies	√							√H											
		UT8Q512K8	SRAM	Aeroflex	√						√H												
		UT8CR512K32	SRAM	Aeroflex	√						√H			√H									
		WMS128k8	SRAM	White Electronics	√						√H			√H									
		HY57V654020B	SDRAM	Hyundia	√						√H			√H									
		K4S510432M	SDRAM	Samsung	√						√H		√H										
		MT48LC128M4A2	SDRAM	Micron	√						√H		√H										
		MT48LC16M16A	SDRAM	Micron	√									√H									
		AD790	Voltage Comparator	Analog Devices	√							√H											
		CMP401	Voltage Comparator	Analog Devices	√							√H											
		LM119	Voltage Comparator	National Semiconductor	√							√H											
		LM139	Voltage Comparator	National Semiconductor	√							√H											
		LM185	Voltage Reference	National Semiconductor	√							√H											
		LM2941	Voltage Regulator	National Semiconductor	√							√H											
		HS-117RH	Voltage Regulator	Intersil	√							√H											
		LM117	Voltage Regulator	National Semiconductor	√							√H											
		LM117HVH	Voltage Regulator	National Semiconductor	√							√H											
		LM137	Voltage Regulator	National Semiconductor	√							√H											
		RH1085	Voltage Regulator	Linear Technology	√							√H											
		LTC3413	DC-DC Converter	Linear Technology	√							√H											
		MSK5920-1.5RH	Voltage Regulator	MS Kennedy	√							√H											
		MSK5920-2.5RH	Voltage Regulator	MS Kennedy	√							√H											
5. pp. 31-37	T. Oldham	MT29F4G08AAAWP	4 Gbit Flash	Micron	√		√				√H		√H										
		HY27UF084G2M	4 Gbit Flash	Hynix	√		√				√H		√H										

		K9F4G08U0A	4 Gbit Flash	Samsung	√		√				√H		√H										
6. pp. 38-41	H. Schmidt	K9F8G08U0M	8 Gbit Flash	Samsung	√		√				√H		√H										
		K9F4G08U0A	4 Gbit Flash	Samsung	√		√				√H		√H										
		NAND04GW3B2B	4 Gbit Flash	STMicroelectronics	√						√H		√H										
		K9F8G08U0M	8 Gbit Flash	Samsung	√		√				√H		√H										
		MT29F4G08AAA	4 Gbit Flash	Micron	√		√																
7. pp. 42-46	R. Ladbury		K4T1G044QAGC-ZCD5	Samsung	√		√				√H,P		√H,P	√H									
			EDE1104AB-50E	Elipida	√		√				√H,P		√H,P	√H									
			MT47H128M8HQ-3E	Micron	√		√				√H		√H	√H									
8. pp. 47-52	L. Scheick		256 Mbit SDRAM	Samsung	√								√H										
			256 Mbit SDRAM	Toshiba	√								√H										
9. pp. 53-57	T. Miyahira	LTC1419		Linear Technology	√									√H									
		55LBC174		Texas Instruments	√									√H									
		55LBC175		Texas Instruments	√									√H									
		CD54HCT4046		Texas Instruments	√									√H									
		HI-507		Intersil	√									√H									
		ISL43110		Intersil	√									√H									
		UT63M147		Aeroflex	√									√H									
		54LVTH244		Texas Instruments	√									√H									
		ADuM1401		Analog Devices	√									√H									
10. pp. 58-63	F. Irom	HS-26CLV32RH	Differential Receiver	Intersil	√							√H											
		HS-26CLV31RH	Differential Driver	Intersil	√							√H											
		HS-26CT32RH	Differential Receiver	Intersil	√							√H											
		HS-26CT32RH	Differential Driver	Intersil	√							√H											
		55LBC175	Differential Receiver	Texas Instruments	√							√H											
		55LBC174	Differential Driver	Texas Instruments	√							√H											
11. pp. 64-68	S. Seehra	MC100EL32	ECL Logic	ON Semiconducor	√		√				√H												
		MC100EP52	ECL Logic	ON Semiconducor	√		√				√H												
		NB100LVEP91	ECL Logic	ON Semiconducor	√		√				√H												
		MC100EP142	ECL Logic	ON Semiconducor	√		√				√H												
12. pp. 69-75	R. Koga	TLK2711	Transceiver	Texas Instruments	√		√				√H												
13. pp. 76-81	R. Lawrence	Test Structure	Gate Ocide 90nm		√		√								√H								
14. pp. 82-84	D. Adams	NGCP3580	Analog Multiplexer	Northop Grumman	√		√																
15. pp. 85-89	C. Hafer	Test Structure	Phase Locked Loop	Aeroflex	√							√H											
16. pp. 90-93	A. Vera	XC5VLX50T	FPGA	Xilinx	√											√							
17. pp. 94-97	A. Manuzzato	XC3S200	FPGA	Xilinx	√		√					√H			√H								
18. pp. 98-105	G. Swift	XQR4VSX55	FPGA	Xilinx	√							√H			√H								
		XQR4VFX60	FPGA	Xilinx	√							√H			√H								
		XQR4VFX140	FPGA	Xilinx	√							√H			√H								
		XQR4VLX200	FPGA	Xilinx	√						√H				√H								
19. pp. 106-109	P. Peronnard		CYCLONE-HIF																	√			
			ATLAS																	√			
20. pp. 110-117	K. Kruckmeyer	LM139AxRLQMLV	Voltage Comparator	National Semiconductor	√			√															
		LM193AxRLQMLV	Voltage Comparator	National Semiconductor	√			√															
		LM124AxRLQMLV	Operational Amplifier	National Semiconductor	√			√															
21. pp. 118-123	J. George	XC4VSX55	FPGA	Xilinx	√						√N												
		XCV5LX50T	FPGA	Xilinx	√						√N												
22. pp. 124-130	A. Bogorad	PM108	Operational Amplifier	Analog Devices	√			√															
		PM139A	Voltage Comparator	Analog Devices	√			√															
		LM139	Voltage Comparator	Analog Devices	√		√	√															
		LM139	Voltage Comparator	National Semiconductor	√		√	√															
		LM124A	Operational Amplifier	National Semiconductor	√		√	√															
		LM124A	Operational Amplifier	National Semiconductor	√		√	√															
		LM101A	Operational Amplifier	National Semiconductor	√		√	√															
		OP470A	Operational Amplifier	Analog Devices	√		√	√															
		HCPL-268K	Optocoupler	Agilent Technologies	√		√	√															
		AD534	Analog Multiplexer	Analog Devices	√		√	√															
		RH1009	Voltage Reference	Linear Technology	√		√	√															
		SG1825	Pulse Width Modulator	Microsemi	√		√	√															
		SG1846	Pulse Width Modulator	Microsemi	√		√	√															
23. pp, 131-134	G. Quadri	61055	Phottransistor	Micropac	√		√											√					
		MIC-1006-4	Phottransistor	Micropac	√		√											√					
24. pp. 135-141	M. McMahan	Standard	Dosimetry of Proton Beams																		√		
25. pp. 142-147	W. Boley	388076-0001	ICE Controller	AMI	√		√																
		745ABT126D	Buffer	Philips	√		√												√				
		74AC175MTCX	Flip Flop	Fairchild	√		√																
		74AC74MTCX	Flip Flop	Fairchild	√		√																
		SN74AHC1G00DCKR	NAND	Texas Instruments	√		√																
		SN74AHC1G02DVBR	NOR	Texas Instruments	√		√																
		SN74AHC1G86DBVR	XOR	Texas Instruments	√		√																
		MPC603ERX133LL	Microprocessor	Freescale	√		√																
		AD603AR	Variable Gain Amplifier	Analog Devices	√														√				
		AD817AR	Operational Amplifier	Analog Devices	√		√												√				
		AD820AR	Operational Amplifier	Analog Devices																			
		AD823AR	Operational Amplifier	Analog Devices	√		√																
		OP1177ARM	Operational Amplifier	Analog Devices	√		√												√				
		OP297GS	Operational Amplifier	Analog Devices	√		√												√				
		OPA655U	Operational Amplifier	Texas Instruments	√														√				
		LMC6482AIM	Operational Amplifier	National Semiconductor	√		√												√				
		MAX4200EUK-T	Buffer	Maxim	√														√				
		AD7249BR	12 bit DAC	Analog Devices	√		√												√				
		AD7858BR	12 bit ADC	Analog Devices	√		√																
		ADS1211U	24 bit ADC	Texas Instruments	√		√																
		PCM1702U	24 bit DAC	Texas Instruments	√		√												√				
		ADG426BRS	Analog Multiplexer	Analog Devices	√		√																
		ALD4213SC	Analog Switch	Advanced Linear Devices	√		√																
		DG419DY	Analog Switch	Vishay	√		√																
		MAX4690EAE	Analog Switch	Maxim	√		√																
		MAX4821EAE	Relay Driver	Maxim	√		√																
		CAT24WC256KA	EEPROM	Catalyst	√		√																
		AT24C256W-10SI-2.7	EEPROM	Atmel	√		√																
		TE28F160S3-100	16 Mbit Flash	Intel	√		√																
		S29GL128N90TFIR2	128 Mbit Flash	Spansion	√		√																
		DN3525N8	Power MOSFET	Supertex	√		√																
		IRF3205S	Power MOSFET	International Rectifier	√		√																
		IRF7458	Power MOSFET	International Rectifier	√		√																
		IRFR9220TR	Power MOSFET	International Rectifier	√		√																
		IRL540NS	Power MOSFET	International Rectifier	√		√																
		IRLR024TR	Power MOSFET	International Rectifier	√		√																
		SI2301BDS-T1	Power MOSFET	Vishay	√		√																
		SI2302DS	Power MOSFET	Vishay	√		√																
		SI2320DS	Power MOSFET	Vishay	√		√																
		SI4450DY	Power MOSFET	Vishay	√		√																
		SI4559EYT1	Power MOSFET	Vishay	√		√																
		SI4920DYT1	Power MOSFET	Vishay	√		√																
		SI4963DYT1	Power MOSFET	Vishay	√		√																
		TP0610T	Power MOSFET	Supertex	√		√																
		TP2510N8	Power MOSFET	Supertex	√		√																
		LT1121IST-5	Low Dropout Voltage Regulator	Linear Technology	√		√												√				
		LT1129IS8	Low Dropout Voltage Regulator	Linear Technology	√														√				
		LT1175IS8-5	Low Dropout Voltage Regulator	Linear Technology	√														√				
		REF01CS	Voltage Reference	Analog Devices	√														√				
		MAX505AEAG	24 bit DAC	Maxim	√		√												√				
		MAX909ESA	Voltage Comparator	Maxim	√		√												√				
		MAX973ESA	Voltage Comparator	Maxim	√		√												√				
		TL431AID	Voltage Reference	ST Microelectronics	√														√				
		UC2903DW	Power Supply Monitor	Texas Instruments	√		√												√				
		MOC213-M	Optocoupler	Fairchild	√		√												√				
26. pp. 148-151	A. Sanders	OMH3075	Hall Effect Sensor	Optek	√		√	√				√H		√H					√				
Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.																							

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Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose, X-xray, P-pions				Single Event Effects, H-heavy ion, P-proton, L-laser, N-neutrons							Displacement Damage		Facilities	Standard	Environment	Shielding
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons				
1, pp. 1-8	G, Ginet		Proton Maps South Atlantic Anomaly																			√	
2, pp. 9-15	M. Sirianni	ACS/WFC	CCD	SITe	√	√											√						
		ACS/HRC	CCD	SITe	√	√											√						
		STIS	CCD	SITe	√	√											√						
		W/FPC2	CCD	Loral	√	√											√						
3, pp. 16-25	B. Peters		Single Board Computer PPC603r	General Dynamics		√			√													√	
		603r	Microprocessor	Freescale	√		√				√H,P												
		7447A	Microprocessor	Freescale	√		√				√H,P												
		MT48LC16M4A2	16Mx4 SDRAM	Micron	√									√H									
		MT48LC4MC16A2	4Mx16 SDRAM	Micron	√									√H									
4, pp. 26-29	J. Likar	Solar Array Arcing			√																		
5. pp. 30-33	E. Cascio	Radiation test beamline protons description at Francis H, Burr Proton Therapy Center																		√			
6. 34-37	M. Johnson	Berkely Accelerator Space Effects Light Facility Upgrade description																		√			
7. pp. 38-41	A. Virtanene	RADEF facility upgrade description																		√			
8. pp. 42-57	A. Holmes-Siedle	Type TOT-200, 500, 6	RADFET	REM	√		√,X,P,N		√	√													
9. pp. 58-62	L. Scheick	a1023	SiC Diode	Cree	√										√H,P								
		a1024	SiC Diode	Cree	√						`				√H,P								
10. pp. 63-67	R. Harris	CSD10120A	SiC Diode	Cree	√														√				
		CSD10120D	SiC Diode	Cree	√														√				
		CSD10160A	SiC Diode	Cree	√														√				
		CSD04060A	SiC Diode	Cree	√														√				
		CSD10030A	SiC Diode	Cree	√														√				
		60CTQ150	Schottky Diode	International Rectifier	√														√				
		40CTQ150	Schottky Diode	International Rectifier	√														√				
		10CTQ150	Schottky Diode	International Rectifier	√														√				
		113CNQ100A	Schottky Diode	International Rectifier	√														√				
		43CTQ100	Schottky Diode	International Rectifier	√														√				
		48CTQ060	Schottky Diode	International Rectifier	√														√				
11. pp. 68-72	D. Hansen	Test structure	Photodiode InP	HRL Labs	√		√																
		Test structure	Transistor, HBT InP	HRL Labs	√		√	√															
12. pp. 73-79	J. Simenez	S6436	Si PIN Photodiode	Hanamatsu Corporation	√														√				
		S6968	Si PIN Photodiode	Hanamatsu Corporation	√														√				
		C30809	Si PIN Photodiode	Perkin Elmer Optoelectronics	√														√				
		C30822	Si PIN Photodiode	Perkin Elmer Optoelectronics	√														√				
		FFD-200	Si PIN Photodiode	Perkin Elmer Optoelectronics	√														√				
		PC10-7	Si PIN Photodiode	Perkin Elmer Optoelectronics	√														√				
		PC20-7	Si PIN Photodiode	Pacific Silicon Sensor	√														√				
		PC50-7	Si PIN Photodiode	Pacific Silicon Sensor	√														√				
		TEMD5010	Si PIN Photodiode	Pacific Silicon Sensor	√														√				
		TEMD5110	Si PIN Photodiode	Pacific Silicon Sensor	√														√				
		S3399	Si PIN Photodiode	Hanamatsu Corporation	√														√				
		S6036	Si PIN Photodiode	Hanamatsu Corporation	√														√				
		S6036-01	Si PIN Photodiode	Hanamatsu Corporation	√														√				
		S6801	Si PIN Photodiode	Hanamatsu Corporation	√														√				
		S6801-01	Si PIN Photodiode	Hanamatsu Corporation	√														√				
		S5106	Si PIN Photodiode	Hanamatsu Corporation	√														√				
		S7510	Si PIN Photodiode	Hanamatsu Corporation	√														√				
		S5107	Si PIN Photodiode	Hanamatsu Corporation	√														√				
		BPW 34	Si PIN Photodiode	Osram	√														√				
		BPW 34F	Si PIN Photodiode	Osram	√														√				
		BPW34S	Si PIN Photodiode	Osram	√														√				
13. pp. 80-84	J. Shelton		Si Photocell	Sandia MDL	√		√																
		PPC-6E	Multi-junction GaAs Photocell	Photonic Power	√		√																
14. pp. 85-91	O. Gilard		Phototransistor 8 channel		√		√												√				
15. pp. 92-95	C. Kuznia		Transceiver, Fibre Channel		√						√H												
16. pp. 96-100	D. Sable	DVSA2805S	DC-DC Converter	VPT Inc.	√		√					√H											
		DVSA2815D	DC-DC Converter	VPT Inc.	√		√	√															
		DVFL2815D	DC-DC Converter	VPT Inc.	√		√																
		DVFL2805S	DC-DC Converter	VPT Inc.	√		√	√															
17. pp. 101-106	N. van Vonno	IS1009RH	2.5V Voltage Reference	Intersil	√			√															
		ISL72991RH	Low Dropout Voltage Regulator	Intersil	√			√															
18. pp. 107-112	D. Love	LT-1078	Operational Amplifier	Linear Technology	√			√															
19. pp. 113-117	K. Kruckmeyer	ADC08D1000WG-QV	8 bit ADC	National Semiconductor	√						√H												
20. pp. 118-122	J. George	BU-61582	Advance Communication Engine 1553	Data Devices Corporation	√						√H												
21. pp. 123-130	C. Hafer	Test structure	WX23A TSMC 1P8M EPI 130nm	Aeroflex	√		√				√H	√H											
22. pp. 131-134	C. Xiang		Serializer ASIC	CERN Microelectronics Group	√		√X				√P												
23. pp. 135-140	P. Layton	OP-400	Operational Amplifier	Maxwell	√		√																
		358	Analog Multiplexer	Maxwell	√		√																
		306	Analog Multiplexer	Maxwell	√		√																
		28C010T	1M bit EEPROM	Maxwell	√		√																

		7545AA	12 bit DAC	Maxwell	√		√																
		7672	12 bit DAC	Maxwell	√		√																
		7B991	Programmable Skew Clock Buffer	Maxwell	√		√																
		7872	14 bit ADC	Maxwell	√		√																
24. pp. 141-145	F. Irom	LTC2052	Operational Amplifier	Linear Technology	√									√H,N									
		LTC1609	Operational Amplifier	Linear Technology	√									√H,N									
		6N134	Optocoupler		√							√H,N											
		LM139	Voltage Comparator	National Semiconductor	√							√H,N											
		LM117HVH	Voltage Regulator	National Semiconductor	√							√H,N											
		K9F1G08UOM	NAND Flash	Samsung	√							√H,N	√H,N										
		229JL0644	NOR Flash	Spansion	√							√H,N	√H,N										
		UT8CR512K32	SRAM	Aeroflex	√							√H,N	√N										
		MPC7448	Microprocessor	Freescale	√							√H,N	√H,N										
		K4S510432M	SDRAM	Samsung	√							√N	√N										
		MT48LC128M4A2	SDRAM	Micron	√							√N	√N										
25. pp. 146-152	D. Cochran	AD565	12 bit DAC	Analog Devices	√		√																
		AD670	12 bit DAC	Analog Devices	√		√																
		LTC1419	14 bit ADC	Linear Technology	√		√																
		Test structure	65 nm N and P MOSFET	IMEC	√		√																
		JANS2N2222	Bipolar Transistor	Analog Devices	√		√																
		JANS2N3501	Bipolar Transistor	Analog Devices	√		√																
		OP200	Operational Amplifier	Analog Devices	√		√																
		OP400	Operational Amplifier	Analog Devices	√		√																
		AD524	Instrumentation Amplifier	Analog Devices	√		√																
		OP27A	Operational Amplifier	Analog Devices	√		√																
		OP11	Operational Amplifier	Analog Devices	√		√																
		OP42	Operational Amplifier	Analog Devices	√		√																
		LT1037	Operational Amplifier	Linear Technology	√		√																
		54ACTQ14	Hex Inverter	National Semiconductor	√		√																
		54ACTQ244	Buffer/Line Driver	National Semiconductor	√		√																
		54ACTQ16244	Buffer/Line Driver	National Semiconductor	√		√																
		SG1526	PWM Controller	Micro-Semi	√		√																
		UC1708	Non-inverting High Speed Power Drive	Texas Instruments	√		√																
		LP2951	Voltage Regulator	National Semiconductor	√		√																
		NAND01GW3BZAN6E	NAND Flash	ST Microelectronics	√		√																
		AMD29LV256	256M bit Flash	Advanced Micro Devices	√		√																
		K9F4G08U0A	NAND Flash	Samsung	√		√																
		TC58FVM7B2ATG-65	128M bit NOR Flash	Toshiba	√		√																
		AT22V10	EEPLD	Atmel	√		√																
		TL431	Programmable Shunt Regulator	Texas Instruments	√		√																
		AD584	Voltage Reference	Analog Devices	√		√																
		AD589	Voltage Reference	Analog Devices	√		√																
		OMH3075	Hall Effect Sensor	Optek Technology	√		√																
		HCPL-6751	Power MOSFET Optocoupler	Agilent Technologies	√														√				
26. pp. 153-161	M. O'Bryan	Eclipse	Shift Register	Aeroflex	√						√H,P												
		RTAX-S	FPGA	Actel	√						√H,P												
		LX25, Virtex IV	FPGA	Xilinx	√								√H	√H,P									
		XC4VFX60	FPGA	Xilinx	√								√H	√H									
		AT22V10	Programable Logic Array	Cypress	√						√H			√H									
		RH137H	Voltage Regulator	Linear Technology	√							√H											
		TPS76710	Voltage Regulator	Texas Instruments	√							√H		√H									
		TPS73601	Voltage Regulator	Texas Instruments	√							√H		√H									
		SAT8605R	Voltage Regulator	SatCon Electronics	√							√H		√H									
		RH1013	Operational Amplifier	Linear Technology	√						√H	√H											
		MAX997	Voltage Comparator	Maxim	√						√H			√H									
		RHFL4913	Low Dropout Voltage Regulator	ST Microelectronics	√						√H	√H		√H									
		ACT8601	Voltage Regulator	Aeroflex	√							√H		√H									
		TL431	Programmable Shunt Regulator	Texas Instruments	√							√H		√H									
		LMH6702	Operational Amplifier	National Semiconductor	√							√H		√H									
		RH1499	Operational Amplifier	Linear Technology	√							√H		√H									
		AD549	Operational Amplifier	Analog Devices	√							√H		√H									
		HCPL625K	Optocoupler	Agilent Technologies	√							√P											
		HCPL-6751	Power MOSFET Optocoupler	Agilent Technologies	√							√P											
		NAND01GW3B2ANGB	1 Gbit Flash	ST Microelectronics	√						√H,P			√H,P									
		K9F4G08U0A	4 Gbit Flash	Samsung	√						√H			√H									
		KH41G0X38	1 Gbit DDR SDRAM	Samsung	√						√H			√H									
		TLK2711	Transceiver	Texas Instruments	√						√H			√H	√H								
		SHD85202	Power MOSFET Driver	Sensitron	√									√H									
		53111	Power MOSFET Optocoupler	Micropac	√							√H,P		√H		√H							
		MSAFX11P50A	Power MOSFET	Microsemi	√											√H							
		OMH3075S	Hall Effect Sensor	Optek Technology	√							√H		√H									
		TGL4302	Voltage Variable Attenuator MMIC	Triquint	√							√H		√H									
		2N2222	NPN Bipolar Transistor	Microsemi	√							√H		√H									
27. pp. 162-166	J. Lintz	Pass3	Single Board Computer RHPPC	Honeywell	√						√H,P												
28. pp. 167-171	G. Allen	2VP40 Virtex-II	FPGA, PPC Core	Xilinx	√						√H,P												
		VHFX60 Virtex IV	FPGA, PPC Core	Xilinx	√						√H,P												
29. pp. 172-176	A. Vera	XC4VFX12	FPGA	Xilinx	√													√					
30. pp. 177-184	H. Quinn	XC5VLX50	FPGA	Xilinx	√						√H,P												
31. pp. 185-188	J. Tausch	Prototype	SRAM		√									√N									
32. pp. 189-193	J. Tausch	S2SFL0664A-00	64Mbit NROM Flash	Spansion	√		√N				√N		√N	√N									
		S29NS-N-00	128Mbit NROM Flash	Spansion	√		√N				√N		√N	√N									
		S30MS-P-00	16Mbit NROM Flash	Spansion	√		√N				√N		√N	√N									
33. pp. 194-198	D. Nguyen	MT29F608AAA	4Gbit Flash	Samsung	√		√																
		K9F4608UOA	4Gbit Flash	Hynix	√		√																
		HY27UF08462M	4Gbit Flash	Micron	√		√																
		MR2A16A512KB	4Gbit Flash	Freescale	√		√																
34. pp. 199-203	R. Koga	MT46V64M16-75A	1Gbit DDR SDRAM	Micron	√						√H,P												
		K4H1G0438M-TCB0	1Gbit DDR SDRAM	Samsung	√						√H,P												
		K4T1G164QA-ZCD5	1Gbit DDR SDRAM	Samsung	√						√H,P												
		K4H510838B-TCB3	512Mbit DDR SDRAM	Samsung	√						√H,P												
		K4T51083QC-ZCD5	512Mbit DDR SDRAM	Samsung	√						√H,P												
		HYB18T512800BF-3F	512Mbit DDR SDRAM	Qimonda	√						√H,P												
35. pp. 204-207	R. Lawrence	MT48LC128M4A2	512Mbit SDRAM	Micron	√		√				√H,P		√H,P	√H									
		EDS5104ABTA-75I	512Mbit SDRAM	Elpida	√		√				√H,P		√H,P	√H									
36. pp. 208-210	D. Hiemstra	MT48LC4M32B2TG-6	128Mbit SDRAM	Micron	√		√P				√P												
37. pp. 211-214	D. Hiemstra	Guide to the Radiation	Effects Data Workshop 2006																				
38. pp. 215-220	D. Hansen	Test Structure	7HP SiGe HBT Transistor	IBM	√			√															
39. pp. 221-225	T. Oldham	K9F4608UOA	4Gbit Flash	Samsung	√		√				√H		√H										
Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.																							

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Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose				Single Event Effects, H-heavy ion, P-proton, L-laser, N-neutrons							Displacement Damage		Facilities	Standard	Environment	Shielding
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons				
1, pp. 1-5	D. Hiemstra	Guide to the Radiation	Effects Data Workshop 1992-2005																				
2, pp. 6-12	D. Cochran	AD549LH	Operational Amplifier	Analog Devices	√			√															
		PA10M	Operational Amplifier	Apex	√			√															
		OP400	Operational Amplifier	Analog Devices	√			√															
		OP200	Operational Amplifier	Analog Devices	√			√															
		OP77	Operational Amplifier	Analog Devices	√			√															
		OP97A	Operational Amplifier	Analog Devices	√			√															
		HA2-5142	Operational Amplifier	Intersil	√			√															
		LM101	Operational Amplifier	National Semiconductor	√			√															
		LMH6702	Operational Amplifier	Analog Devices	√			√															
		LM6142	Operational Amplifier	National Semiconductor	√			√															
		AD524	Instrumentation Amplifier	Analog Devices	√			√															
		AD585	Sample and Hold	Analog Devices	√			√															
		AD650	Voltage to Frequency Converter	Analog Devices	√			√															
		MX7545A	12 bit DAC	Maxim	√			√															
		AD1671	12 bit DAC	Analog Devices	√			√															
		AD580	Voltage Reference	Analog Devices	√		√	√															
		MAX6021	Voltage Reference	Maxim	√			√															
		LM136	Voltage Reference	National Semiconductor	√			√															
		LM111	Voltage Comparator	National Semiconductor	√			√															
		LM117	Voltage Regulator	National Semiconductor	√			√															
		LM119	Voltage Comparator	National Semiconductor	√			√															
		LM139	Voltage Comparator	National Semiconductor	√			√															
		MT29F2G08B	Flash	Micron	√		√																
		54ACTQ04	Hex Inverter	National Semiconductor	√		√																
		54ACTQ14	Hex Inverter	National Semiconductor	√		√																
		54AC2525	Clock Distributor	National Semiconductor	√		√																
		54ACTQ16244	Buffer/Driver	National Semiconductor	√		√																
		DS26F31	Differential Line Driver	National Semiconductor	√		√																
		SG1644	Driver	Linfinity	√		√																
		2N2222	NPN Transistor	Microsemi	√			√															
		2N2907	PNP Transistor	Microsemi	√			√															
		SW06	Analog Switch	Analog Devices	√		√																
		UC1825	PWM Controller	Texas Instruments	√		√																
		SG1524	PWM Controller	Linear Technology	√			√															
		S3590-02	PIN Diode	Hammamatsu	√		√																
		RP21005D0-100	Solid State Power Controller	Data Devices Corporation	√			√															
		RP21005D0-160K	Solid State Power Controller	Data Devices Corporation	√			√															
		LTX1000A	Voltage Reference	Linear Technology	√			√															
		AD845	Operational Amplifier	Linear Technology	√			√															
		G FLX RAM249	SRAM Test structure	LSI Logic	√		√																
		G FLX RAM187	SRAM Test structure	LSI Logic	√		√																
		G FLX L9A0443	0.1um CMOS Test structure	LSI Logic	√		√																
		Test structure	90nm Nano Crystal Memory	Freescale	√		√																
		53272	Power MOSFET Optocoupler	Micropac	√													√					
		HCPL-6731	Optocoupler	Agilent	√													√					
		HCPL-520K	Optocoupler	Agilent	√													√					
		HCPL-655K	Optocoupler	Agilent	√													√					
		HCPL-553K	Optocoupler	Agilent	√													√					
		LTX1000A	Voltage Reference	Linear Technology	√													√					
		STAR1000	CMOS Image Sensor	Fill Factory	√													√					
		ADV202	Video Cpmpressor	Analog Devices	√													√					
3, pp. 13-18	P. Layton	28C010T	1 Mb EEPROM	Maxwell	√									√H									
		104426	Power Converter	Maxwell	√									√H									
		104648	Power Supervisor	Maxwell	√									√H									
		27C010T	1 Mb UVPROM	Maxwell	√									√H									
		7846	16 bit ADC	Maxwell	√									√H									
		29F0408	32 Mb Flash	Maxwell	√		√																
		7672	12 bit ADC	Maxwell	√		√																
		7809	16 bit ADC	Maxwell	√		√																
		8408	8 bit DAC	Maxwell	√		√																
		7872	12 bit ADC	Maxwell	√		√																
4, pp. 19-25	M. O'Bryan	K4H1G-438	1 Gb SDRAM	Samsung	√						√H		√H	√H									
		Test structure	SDRAM	Maxwell	√						√H		√H										
		MT29F2G08B	Flash	Micron	√						√H		√H										
		Test structure	Shift Register	IBM	√						√H												
		Test structure	G FLX Logic Chip	LSI Logic	√						√H												
		Test structure	G FLX SRAM	LSI Logic	√						√H			√H									
		AD565	12 bit DAC	Analog Devices	√							√H											
		AD650	Voltage to Frequency Converter	Analog Devices	√							√H		√H									
		OP11	Operational Amplifier	Analog Devices	√									√H	√H								
		RHFL4913	Low Dropout Voltage Regulator	STMicroelectronics	√							√H		√H									
		MSK5900	Voltage Regulator	MS Kennedy	√							√H		√H									
		MSK5920	Voltage Regulator	MS Kennedy	√							√H		√H									
		RH1013	Operational Amplifier	Linear Technology	√							√H											
		XQ2VP40	FPGA	Xilinx	√								√H										
		RTAX-S	FPGA	Actel	√						√H												
		RTSXSU	FPGA	Actel	√						√H												
		Eclipse	FPGA	Aeroflex	√						√H												
		STAR1000	CMOS Image Sensor	Fill Factory	√							√P	√P	√P									
		PE97201	Fibre Optic Module	Peregrine Semiconductor	√										√P								
		HTE271010G9AT00	Hard Disk Drive	Hitachi	√								√P	√P									
		EP1525	FPGA	Altera	√									√H									
		7809	16 bit ADC	Maxwell	√								√H										
		Spartan III	FPGA	Xilinx	√									√P									
5, pp. 26-36	C. Kouba	2000m/S	Digital Camera	Adimec	√								√P										
		D2X	Digital Camera	Nikon	√								√P										
		DCS-760	Digital Camera	Kodak	√								√P										
		DSR-25	Digital Video Taoe Recorder	Sony	√								√P										
		PT1000-CL2-E	Ethernet Controller	Pleora	√								√P										
		WRT54GX4	Wireless Router	LinkSys	√								√P										

		WPNT834	Wireless Router	Net Gear	√								√P												
		DI-634M	Wireless Router	D-Link	√								√P												
		Max Line +2	Hard Disk Drive	Maxtor	√								√P												
		ST3300831A	Hard Disk Drive	Seagate	√								√P												
		HDS722525VLAT80	Hard Disk Drive	Hitachi	√								√P												
		WD25000JB-98GVA0	Hard Disk Drive	Western Digital	√								√P												
		SD-R6472	DVD R/W Drive	Toshiba	√								√P												
		93213488	Floppy Drive	Sony	√								√P												
		IASW5P	Ethernet Switch	B&B Electronics	√								√P												
		SS-E05CM	Ethernet Switch	Wlinx Technology	√								√P												
		MS1553PC104-R	1553 PC104 Card	Condor	√								√P												
		ASF-PC014XT-1	1553 PC104 Card	SBS	√								√P												
		SLCF1GBJ	1GB Compact Flash Card	Simple Technology	√								√P												
		SLCF1GBJI	1GB Compact Flash Card	Simple Technology	√								√P												
		TS1GCF45I	1GB Compact Flash Card	Transcend	√								√P												
		CF/1024-S	1GB Compact Flash Card	Kingston	√								√P												
		SDP3B1-1024-101-80	1GB Compact Flash Card	Sandisk	√								√P												
		SDP3B1-1024-101-80	1GB Compact Flash Card	Sandisk	√								√P												
		SDCFB-128-A10	256MB Compact Flash Card	Sandisk	√								√P												
		CFN266-04B5510	256MB Compact Flash Card	Pretec	√								√P												
		CFN266-04BG610	256MB Compact Flash Card	Pretec	√								√P												
		CFN01G0585010	1GB Compact Flash Card	Pretec	√								√P												
		VI-810435	DC-DC Converter	Vicor	√								√P												
		VI-233-IW	DC-DC Converter	Vicor	√								√P												
		VI-253-IU	DC-DC Converter	Vicor	√								√P												
		VI-811275	DC-DC Converter	Vicor	√								√P												
		XCR3256	CPLD	Xilinx	√								√P												
		XC95288-20HQ208I	CPLD	Xilinx	√								√P												
		XC2C64-7CP56I	CPLD	Xilinx	√								√P												
		XC2S200	FPGA	Xilinx	√								√P												
		XCS20XL	FPGA	Xilinx	√								√P												
		XC2V3000-5FF1152C	FPGA	Xilinx	√								√P												
		XC2V250-6CS1441	FPGA	Xilinx	√								√P												
		AM29LV800BB-90EC	8 Mbit Flash	Advanced Micro Devices	√								√P												
		K9F2G08U0M	256MB Flash	Samsung	√								√P												
		K9K4G08U0M	256MB Flash	Samsung	√								√P												
		W5AB0022A042	Flash Memory Controller	TDK	√								√P												
		DS2516APTA-75	256Mbit SDRAM	Elipida	√								√P												
		TC59S6432CFT-80	SDRAM	Toshiba	√								√P												
		K4S561632E-TL75	256 Mbit SDRAM	Samsung	√								√P												
		K4H560838E-TCB3	256 Mbit DDR SDRAM	Samsung	√								√P												
		K4H281638E-TCB3	128 Mbit SDRAM	Samsung	√								√P												
		MT46V16M16TG-75	256 Mbit DDR SDRAM	Micron	√								√P												
		IDTY70V9289L9RFI	64K x 16 Dual Port RAM	Integrated Device Technologies	√								√P												
		IS41LV16256-35T	4 Mbit DRAM	ICSI	√								√P												
		XCF08PFS48C	Flash PROM	Xilinx	√								√P												
		XC95144-7PQ100	CPLD	Xilinx	√								√P												
		EP1K1000C208-3	PLD	Altera	√								√P												
		EPM3128ATC100-5	PLD	Altera	√								√P												
		EPM7064ST144-7	PLD	Altera	√								√P												
		EP1C12Q24017	FPLD	Altera	√								√P												
		FWIXP425BD	IXP425 Network Processor	Intel	√								√P												
		TS68302MAB/C16	Processor	Atmel	√								√P												
		RK80532EE056512	Processor, Xeon	Intel	√								√P												
		TMS320C6713GDP	Digital Signal Processor	Texas Instruments	√								√P												
		SM320VC33GNM150	Digital Signal Processor	Texas Instruments	√								√P												
		TMS320C6416GLZ	Digital Signal Processor	Texas Instruments	√								√P												
		TMS320C6416GLZ	Digital Signal Processor	Texas Instruments	√								√P												
6, pp. 37-42	F. Irom	AD7714	24 bit ADC	Analog Devices	√									√H											
		LTC1604	16 bit ADC	Analog Devices	√									√H											
		AD977	16 bit ADC	Analog Devices	√									√H											
		MAX708	Microprocessor Supervisor	Maxim	√									√H											
		72V36110	FIFO	Integrated Device Technologies	√							√H		√H											
		TSS902F	Viterbi Decoder	Atmel	√								√H	√H											
7, pp. 43-49	A. Estaban	AD9042	12 bit ADC	Analog Devices	√							√H		√H	√H										
		AD9731-713D	10 bit ADC	Analog Devices	√								√H		√H										
		TS8388BVF	8 bit ADC	Atmel	√							√H			√H										
		TS86101G2BVGL	DAC	Atmel	√								√H	√H											
		UT54ACS164245	16 bit Transceiver	Aeroflex	√								√H		√H										
8, pp. 50-56	R. Chavez	FZT458	NPN Transistor	Zetex Semicinductor	√			√																	
		FZT958	PNP Transistor	Zetex Semicinductor	√			√																	
		LT1211	Operational Amplifier	Linear Technology	√			√																	
		OP97	Operational Amplifier	Analog Devices	√			√																	
		UC1845	PWM Controller	Texas Instruments	√			√																	
9, pp. 57-61	L. Selva	FF150R12KE3G	Insulated Gate Bipolar Transistor	International Rectifier	√				√								√H								
		STO83S12PFK0	Silicon Controlled Rectifier	Eupec	√				√								√H								
		TT121N12KOF	Silicon Controlled Rectifier	Eupec	√				√								√H								
10, pp. 62-65	A. Appaswamy	Test structure	nFET, PFET, PDSOI	Custom	√				√																
		Test structure	nFET, PFET, PDSSOI	Custom	√				√																
11, pp. 66-71	S. Currie	Test structure	InAs HEMT	Custom	√				√																
		Test structure	InAs HBT	Custom	√				√																
12, pp. 72-76	T. Miyahira	62000	Light Emitting Diode	Micropac	√															√				√	
		62078	Light Emitting Diode	Micropac	√															√					
		66193	Optocoupler	Micropac	√															√					
		610055	Phototransistor	Micropac	√															√					
13, pp. 77-84	J. Jimenez	SFH464	Light Emitting Diode	Osram Opto	√															√					
		L6108	Light Emitting Diode	Hammamatsu	√															√					
		L6112	Light Emitting Diode	Hammamatsu	√															√					
		SMT680	Light Emitting Diode	Epitex	√															√					
		SMT700	Light Emitting Diode	Epitex	√															√					
		SMT735	Light Emitting Diode	Epitex	√															√					
		SMT760	Light Emitting Diode	Epitex	√															√					
		HE7601SG	Light Emitting Diode	OpNext	√															√					
		SMT780	Light Emitting Diode	Epitex	√															√					
		SMT810	Light Emitting Diode	Epitex	√															√					
		SMT820	Light Emitting Diode	Epitex	√															√					
		HE8811	Light Emitting Diode	OpNext	√															√					
		SMT830	Light Emitting Diode	Epitex	√															√					
		L3989	Light Emitting Diode	Hammamatsu	√															√					
		TSHG8200	Light Emitting Diode	Vishay	√															√					
		TSMG2700	Light Emitting Diode	Vishay	√															√					
		LED840-04AU	Light Emitting Diode	Epitex	√															√					
		CLE330E	Light Emitting Diode	Clairex	√															√					
		L7558	Light Emitting Diode	Hammamatsu	√															√					
		SFH4650	Light Emitting Diode	Osram Opto	√															√					
		L9337	Light Emitting Diode	Hammamatsu	√															√					
		HE8812SG	Light Emitting Diode	OpNext	√															√					
		ELD-920-535	Light Emitting Diode	Roithner	√															√					
		L9338	Light Emitting Diode	Hammamatsu	√															√					
		ELD-950-525	Light Emitting Diode	Roithner	√															√					
		SFH4200	Light Emitting Diode	Osram Opto	√															√					
		SFH4600	Light Emitting Diode	Osram Opto	√															√					
		SFH4209	Light Emitting Diode	Osram Opto	√															√					
14, pp. 85-93	R. Pease	MIC29372	Low Dropout Voltage Regulator	Micrel	√			√																	
		LT1175-5	Low Dropout Voltage Regulator	Linear Technology	√			√																	
		ISL72991RH	Low Dropout Voltage Regulator	Intersil	√			√																	
15, pp. 94-100	M. Hartwell	Test structure	N-channel MOSFET	MagnaChip Semicinductor	√		√																		
		Test structure	N-channel MOSFET RHBD	MagnaChip/Aeroflex	√		√									√H		√H							
		Test structure	MOSFET Driver RHBD	MagnaChip/Aeroflex	√		√									√H		√H							
16, pp. 101-104	J. Wang	Test structure	Floating Gate Switch Flash FPGA	Actel	√		√																		
17, pp. 105-108	D. Hiemstra	XC4VLX25-10FF668C	FPGA	Xilinx	√				√			√P		√P											
18, pp. 109-114	J. George	XC4VLX60-10FF668C	FPGA	Xilinx	√							√H,P		√H,P											
		XC4VSX35-10FF668C	FPGA	Xilinx	√							√H,P		√H,P											
		XC4VSX55-10FF1148	FPGA	Xilinx	√							√H,P		√H,P											
19, pp. 115-120	G. Allen	APA300-PQ208	FPGA	Actel	√							√H													
		EP2S60F1020C4	FPGA	Altera	√										√H										
		HC220-TC1	ASIC	Altera	√										√H										
20, pp. 121-125	D. Nguyen	9F2G08UOM	Flash	Samsung	√		√					√H		√H											
21, pp. 126-130	R. Ladbury	K4H1G0438	1Gbit DDR SDRAM	Samsung	√		√					√H,P		√H	√H										
22, pp. 131-135	C. Hafer	UT8ER512K32	16Mbit SRAM	Aeroflex	√		√					√H			√H										
23, pp. 136-143	R. Nowlin	Test structure, 0.18um	12T SRAM	Jazz/ATK	√		√					√H													
		Test structure, 0.18um	Non-Dice	Jazz/ATK	√		√					√H													
		Test structure, 0.35um	12T SRAM	Jazz/ATK	√		√					√H													
		Test structure, 0.35um	Non-Dice	Jazz/ATK	√		√					√H													
		Test structure, 0.18um	12T SRAM	TSMC/ATK	√		√					√H													
		Test structure, 0.18um	Non-Dice	TSMC/ATK	√		√					√H													
		Test structure, 0.35um	12T SRAM	TSMC/ATK	√		√					√H													
		Test structure, 0.35um	Non-Dice	TSMC/ATK	√		√					√H													
		Test structure, 0.18um	Dice	Jazz/ATK	√														√						
		Test structure, 0.35um	Dice	Jazz/ATK	√														√						
		Test structure, 0.18um	Dice	TSMC/ATK	√														√						
		Test structure, 0.18um	Dice	TSMC/ATK	√														√						
24, pp. 144-149	R. Koga	54ACTQ08	AND Gate	National Semiconductor	√							√H	√H												
		54ACTQ241	Buffer/Driver	National Semiconductor	√							√H	√H												
		54ACTQ245	Transceiver	National Semiconductor	√							√H	√H												
		54ACTQ273	D Flip Flop	National Semiconductor	√							√H	√H												
		54ACTQ374	D Flip Flop	National Semiconductor	√							√H	√H												
		54ACQ374	D Flip Flop	National Semiconductor	√							√H	√H												
25, pp. 150-153	C. Poivey	Test structures, 0.11um	SRAM-187/249, Qualification Chip	LSI Logic	√		√					√H	√H		√H										
		Test structures, 0.11um, modified	SRAM-187/249, Qualification Chip	LSI Logic	√		√					√H	√H		√H										
		Test structures, 0.11um, modified	SRAM-187/249, Qualification Chip	LSI Logic	√		√					√H	√H		√H										
26, pp. 154-159	R. Chavez	RH108	Operational Amplifier	Linear Technology	√								√H												
27, pp. 160-164	M. Savage	LMH6639	Operational Amplifier	National Semiconductor	√								√H												
		LMH6654	Operational Amplifier	National Semiconductor	√								√H												
		LMP7711	Operational Amplifier	National Semiconductor	√								√H												
28, pp. 165-171	S. Liu	R6 250VN	Power MOSFET (Prototype)	International Rectifier	√												√H	√H							
		R6 600VN	Power MOSFET (Prototype)	International Rectifier	√												√H	√H							
29, pp. 172-176	R. Edwards		Diode	Manufacture A	√												√N								
			Diode	Manufacture B	√												√N								
			Insulated Gate Bipolar Transistor	Manufacture A	√												√N								
			Insulated Gate Bipolar Transistor	Manufacture B	√												√N								
30, pp. 177-182	E. Cascio	Radiation test beamline protons description at Francis H, Burr Proton Therapy Center																					√		
31, pp 183-187	M. Johnson	Berkely Accelerator Space Effects Light Facility Upgrade description																					√		
32, pp. 188-190	B. von Przewoski	Neutron Radiation Effects Program faciltiy description at Indian University Cyclotron																					√		
33, pp. 191-194	X. Zhu	Shielding various mate	Test vehicle DSP SRAM		√							√N													√
Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.																									

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Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose				Single Event Effects							Displacement Damage		Facilities	Standard	Environment
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			
1, pp. 1-7	T. Page	K6R4008C1C	512K x 8 SRAM	Samsung	√						√H			√H								
		K6R4016C1C	256K x 16 SRAM	Samsung	√						√H			√H								
		K6R4008C1D	512K x 8 SRAM	Samsung	√									√H,N								
		CY7C1049B	512K x 8 SRAM	Cypress Semiconductor	√									√H								
		CY7C1021CV33	64K x 16 SRAM	Cypress Semiconductor	√									√H								
		BS616LV1015AI	64K x 16 SRAM	Brilliance	√									√H								
		IDT71V416L15	256K x 16 SRAM	Integrated Device Technology	√									√H								
2, pp. 8-12	J. George	OP113F	Operational Amplifier	Analog Devices	√							√H										
		OP484F	Operational Amplifier	Analog Devices	√							√H		√H								
		OP270	Operational Amplifier	Analog Devices	√							√H										
		OP400	Operational Amplifier	Analog Devices	√							√H				√H						
		OP467	Operational Amplifier	Analog Devices	√							√H										
		RH1014MW	Operational Amplifier	Linear Technology	√							√H										
		RH108AH	Operational Amplifier	Linear Technology	√							√H										
		RH118H	Operational Amplifier	Linear Technology	√							√H										
		LM124AJ	Operational Amplifier	National Semiconductor	√							√H										
3, pp. 13-19	J. Wert	WS57C49C	EPROM	Waferscale Integration	√									√H								
		AT27C1024	EPROM One Time Programmable	Atmel	√							√H										
		87C196	Microprocessor	Intel	√						√H			√H								
		80860	Microprocessor	Intel	√						√H			√H								
		OFM-1024	Optical Time Domain Reflectometer	Opto-Electronics Inc.	√						√P		√P									
		AD9850	Direct Digital Synthesis	Analog Devices	√						√H			√H								

Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose				Single Event Effects							Displacement Damage				
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons	Facilities	Standard	Environment
4, pp. 20-25	J. Wert		LET Adjustment for Die Overlayers																		√	
5, pp. 26-35	M. O'Bryan	Culprit 8051	Microprocessor	IAµE	√						√H		√H	√H								
		P80C3224	Microprocessor	Intel	√						√H,P		√H,P	√H								
		DS80C320	Microprocessor	Dallas Semicinductor	√						√H,P		√H,P	√H								
		OPA128	Operational Amplifier	Burr-Brown	√							√H		√H								
		IFN423	FET	InterFet Corporation	√							√H		√H								
		SG1526	Pulse Width Modulator	Microsemi	√							√H		√H								
		LXA0387	G12 Process	LSI Logic	√						√H			√H								
		LXA0381	G12 Process	LSI Logic	√						√H			√H								
		Test structure	4Mb Flash Si Nano Crystal	Freescale	√						√H					√H						
		LS2805S	DC-DC Converter	International Rectifier	√							√H		√H	√H							
		RP21002	Solid State Power Controller	Data Devices Corporation	√							√H		√H	√H							
		RP21005	Solid State Power Controller	Data Devices Corporation	√							√H		√H	√H							
		RP210010	Solid State Power Controller	Data Devices Corporation	√							√H		√H	√H							
		53278	Solid State Power Controller	Micropac	√							√H		√H								
		LTC1419	14 bit ADC	Linear Technology	√						√H			√H								
		7872	14 bit ADC	Maxwell	√						√H			√H								
		MAX529	8 bit DAC	Maxim	√							√H		√H								
		XC2VP7	FPGA	Xilinx	√						√H		√H	√H								
		54ACTQ16245	Transceiver	National Semiconductor	√							√H		√H								
		EP1S25	FPGA	Altera	√						√H			√H								
		UT54LVDS031	Transmitter	Aeroflex	√							√H										
		UT54LVDS032	Receiver	Aeroflex	√							√H										
		28C010	EEPROM	Maxwell	√						√H			√H								
		HN58V1001	EEPROM	Renesas	√						√H			√H								
		Test structure	256M SDRAM	Maxwell	√									√H								
6, pp. 36-41	F. Irom	LTC1604	16 bit ADC	Linear Technology	√									√H								
		LTC1609	16 bit ADC	Linear Technology	√									√H								
		LTC1595	16 bit DAC	Linear Technology	√									√H								
		LTC1864	16 bit ADC	Linear Technology	√									√H								
		TC4423	Power MOSFET Driver	Microchip Technology	√									√H								
		DG412	Analog Switch	Maxim	√									√H								
		DG413	Analog Switch	Maxim	√									√H								
		AD9858	Direct Digital Synthesis	Analog Devices	√									√H								
		CY23FS08	Buffer	Cypress Semiconductor	√									√H								
		VPC1	Crystal Oscillator	VITE	√									√H								
7, pp. 42-45	D. Hiemstra	SMJ320C6701	Digital Signal Processor	Texas Instruments	√				√		√P											
8, pp. 46-50	D. Hiemstra	XC2V1000	FPGA	Xilinx	√						√P		√P									
9, pp. 51-56	F. Chayab	XC2VP4	FPGA	Xilinx	√						√P		√P									
10, pp. 57-64	R. Koga	A54SX32A(MEC)	FPGA	Actel	√						√H,P	√H,P										
		A54SX32A(UMC)	FPGA	Actel	√						√H,P	√H,P		√H								
		A54SX72A(MEC)	FPGA	Actel	√						√H,P	√H,P	√H									
		A54SX72A(UMC)	FPGA	Actel	√				√		√H,P	√H,P										
		A1460A	FPGA	Actel	√						√H											
		A500K130	FPGA	Actel	√								√H									
11, pp. 65-69	H. Rufenacht	TSP603r	Microprocessor	Atmel	√						√P											
12, pp. 70-78	R. Joshi	SMV320C6701	Digital Signal Processor	Texas Instruments	√						√H											
13, pp. 79-84	J. Ampe	ADS7816	12 bit ADC	Burr-Brown	√									√H								
		MAX189	12 bit ADC	Maxim	√									√H								
		MAX194	14 bit ADC	Maxim	√									√H								
		MAX145	12 bit ADC	Maxim	√		√				√H			√H								
		MAX1241	12 bit ADC	Maxim	√									√H								
		AD7475	12 bit ADC	Analog Devices	√									√L								
		MAX5121	12 bit DAC	Maxim	√		√				√H,L			√H,L								
		MAX5131	13 bit DAC	Maxim	√						√L			√L								
		MAX5133	13 bit DAC	Maxim	√						√L			√L								
		TLV5636	12 bit DAC	Texas Instruments	√						√L			√L								
		LT1453	12 bit DAC	Linear Technology	√						√L			√L								
		LT1659	12 bit DAC	Linear Technology	√						√L			√L								
		AD5320	12 bit DAC	Analog Devices	√						√L			√L								
14, pp. 85-92	J. Howard	Culprit 8051	Microprocessor	IAµE							√H		√H	√H								
		8052 MCS-51	Microprocessor	Dallas Semicinductor							√H		√H	√H								
		8052	Microprocessor	Intel							√H		√H	√H								
15, pp.93-97	C. Hafer	RadClock	Clock Generator	Aeroflex	√		√					√H		√H								
16, pp. 98-101	M. Hartwell	ASIC Library Element	LVDS Receiver											√H								
		ASIC Library Element	LVDS Driver											√H								
		ASIC Library Element	Phase Lock Loop									√H		√H								
17, pp. 102-109	J. Lauenstein		Radiation Belt Model																			√
18, pp. 110-116	S. Kotntz	ISS MDM	DRAM			√					√											√
19, pp. 117-121	B. Haugerud	Test structure	0.12 and 0.24 µm nFET of SiGe 8HP	IBM	√				√													
20. pp. 122-126	V. Re	Test structure	0.13 µm CMOS HCNOS9	STMicroelectronics	√		√															
21, pp. 127-131	T. Miyahira	LP2953	Low Dropout Voltage Regulator		√			√	√													
22. pp. 132-137	Y. Zong	ADM692	Microprocessor Supervisor	Analog Devices	√		√												√			
		MAX690	Microprocessor Supervisor	Maxim	√		√												√			
		MAX1232	Microprocessor Supervisor	Maxim	√		√												√			
		MAX6304	Microprocessor Supervisor	Maxim	√		√												√			
23, pp. 138-143	F. Franco	REF02	Voltage Reference	Analog Devices	√														√			
		REF02	Voltage Reference	Maxim	√														√			
		REF102	Voltage Reference	Texas Instruments	√														√			
		ADR291	Voltage Reference	Analog Devices	√														√			
		ADR420	Voltage Reference	Analog Devices	√														√			
		ADR430	Voltage Reference	Analog Devices	√														√			
24. pp. 144-148	R. Chavez	LP2951	Voltage Regulator	National Semiconductor	√			√														
		LM2941	Voltage Regulator	National Semiconductor	√			√														
		OP97	Operational Amplifier	Analog Devices	√			√														
		DAC8413	12 bit DAC	Analog Devices	√			√														
		HYSE117RH	Voltage Regulator	Intersil	√			√														
		RH137	Voltage Regulator	Linear Technology	√			√														
25. pp. 149-155	D. Cochran	MAX529	8 bit DAC	Maxim	√		√															
		AD574	12 bit DAC	Analog Devices	√		√															
		AD7545	12 bit ADC	Analog Devices	√		√															
		AD7846SQ	16 bit ADC	Analog Devices	√		√															
		OP27	Operational Amplifier	Analog Devices	√			√														
		OP27A	Operational Amplifier	Analog Devices	√			√														
		OP200	Operational Amplifier	Analog Devices	√			√														
		OP42AZ	Operational Amplifier	Analog Devices	√			√														
		OP400	Operational Amplifier	Analog Devices	√			√														
		OP77	Operational Amplifier	Analog Devices	√			√														
		AD822	Operational Amplifier	Analog Devices	√			√														
		AD744	Operational Amplifier	Analog Devices	√			√														
		AFL2903R3S	DC-DC Converter	Advanced Analog	√		√															
		MAX724ECK	Switchmode Regulator	Maxim	√		√															
		54ACTQ16245	Transceiver	National Semiconductor	√		√															
		HN58C1001T15	EEPROM	Renesas	√		√															
		AD584	Voltage Reference	Analog Devices	√			√														
		LXA0387	ASIC 512K SRAM	LSI Logic	√		√															
		C-2 LED Custom	LED InGaN blue	Micropac	√													√				
		TCM405 Custom	LED GaN UV	Micropac	√													√				
		62087-301	LED	Micropac	√													√				
		61055-305	PT Encoder	Micropac	√													√				
26, pp. 156-162	P. Layton	KM29N3200	32M Flash	Samsung	√						√H		√H									
		48SD1616	256M SDRAM	Maxwell	√		√							√H								
		9240LP	14 bit ADC	Maxwell	√		√															
		8143	12 bit DAC	Maxwell	√		√															
		Si9435	MOSFET	Fairchild	√		√															
		7545A	12 bit DAC	Maxwell	√		√															
		7809LP	16 bit DAC	Maxwell	√		√															
		28C010T	1M EEPROM	Maxwell	√		√															
27, pp. 163-169	P. Lee	KAI-2000M	Charge Coupled Device	Kodak	√		√											√				
28, pp. 170-174	R. Lowell	H-1RG	PIN Diode Array	Rockwell Scientific Company	√		√											√				
29, pp. 175-178	E. Cascio		NPTC proton beam properties																	√		
3, pp. 10-18	M. O'Bryan	54AHCT32	OR Gate	Texas Instruments	√									√								
		54BCT125	Bus Buffer Gate	Texas Instruments	√									√								
		SN54LVT162244A	Buffer/Driver	Texas Instruments	√									√								
		SN54BCT244W	Line Driver	Texas Instruments	√									√								
		SNJ54ABT16244WD	Buffer/Driver	Texas Instruments	√									√								
		SN54LVT16245B	Buffer/Driver	Texas Instruments	√									√								
		SN64BCT126A	Bus Buffer Gate	Texas Instruments	√									√								
		SN64BCT244	Buffer/Driver	Texas Instruments	√									√								
		SN64BCT245	Transceiver Tri-State Output	Texas Instruments	√									√								
		SN74LVT244B	Buffer/Driver	Texas Instruments	√									√								
		SN74LVCC3245	Bus Transceiver	Texas Instruments	√									√								
		IDT74LVC2244A	Buffer/Driver	IDT	√									√								
		HX6228	128k x 8 SRAM	Honeywell	√							√										
		Test Structure	Chalcogenic RAM	BAE Systems	√							√		√								
		Test Structure	512k x 8 NVRAM, Floating Gate	Motorola	√						√			√								
		Test Structure	512k x 8 NVRAM, SiNano	Motorola	√						√			√								
		M65656	32k x 8 SRAM	Matra	√						√											
		IDT71256	256k bit Memory	IDT	√						√											
		T36T-GAFE7	ASIC	Agilent	√						√			√								
		T36T-GAFE5G	ASIC	Agilent	√						√			√								
		T36T-GARC3	ASIC	Agilent	√							√	√	√								
		MAX145	12 bit ADC	Maxim	√						√		√									
		MAX494	Operational Amplifier	Maxim	√							√		√								
		MAX5121	12 bit DAC	Maxim	√						√		√									
		MSK5275	Voltage Regulator	MS Kennedy	√							√		√								
		LM117	Voltage Regulator	National Semiconductor	√							√		√								
		UCC1808	Pulse Width Modulator Controller	Unitrode	√							√		√								
		DVFL286R7S-R	DC-DC Converter	Virginia Power Technology	√							√		√								
		DVTR2815D-R	DC-DC Converter	Virginia Power Technology	√							√		√								
		MAX1523	Switching Regulator	Maxim	√							√		√								
		MAX1809	Switching Regulator	Maxim	√							√										
		MAX1847	Switching Regulator	Maxim	√									√								
		MAX1951	Switching Regulator	Maxim	√							√										
		MAX724	Switching Regulator	Maxim	√							√		√								
		MAX726	Switching Regulator	Maxim	√							√		√								
		AFL2803RS3	DC-DC Converter	International Rectifier	√						√	√				√						
		Test Structure	5AMSTC SiGe	IBM	√						√											
		Test Structure	SiGe	JAZZ	√						√											
		Test Structure	Shift Register	IBM	√						√											
		PE926C31	RS422 Driver	Peregrine	√							√										
		PE926C32	RS422 Receiver	Peregrine	√							√										
		TSS901E	1355 Protocol	Atmel	√						√		√	√								
		UT54LVDS217	Serializer	Aeroflex	√							√										
		S2064	Transceiver	AMCC	√						√			√								
		RHrFPGA	FPGA	Honeywell	√						√											
		CD21CD	Solid State Relay	Teledyne	√							√		√								
		OMR9701	Solid State Relay	International Rectifier	√						√											
		JANS2N2222A	NPN Bipolar Transistor	Microsemi	√							√										
		HV583	High Voltage Driver	SuperTex	√						√			√								
		80387	Microprocessor	Intel	√									√								
		XA-16	ASIC	AMS	√									√								
		TC55257	32k x 8 SRAM	Toshiba	√									√								
		T36T-GTFE	ASIC	Agilent	√									√								
		T36T-GTRC	ASIC	Agilent	√									√								
		AD7675	16 bit ADC	Analog Devices	√									√								
		ADS8323	Communication Part	Texas Instruments	√		√		√					√								
4, pp. 19-25	D. Cochran	SN54LVC162244A	Buffer/Driver	Texas Instruments	√		√		√													

Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.

		SN54LVC162245A	Transceiver	Texas Instruments	√		√															
		CD54HC4052	Multiplexer/Demultiplexer	Texas Instruments	√		√															
		TC55257	32k x 8 SRAM	Toshiba	√		√															
		T36T-GAFE7	ASIC	Agilent	√		√															
		T36T-GARC3	ASIC	Agilent	√		√															
		ADC1175	8 bit ADC	National Semiconductor	√		√															
		MAX145	12 bit ADC	Maxim	√		√															
		MAX494	Operational Amplifier	Maxim	√		√															
		MAX5121	12 bit DAC	Maxim	√		√															
		MAX6325	Voltage Reference	Maxim	√		√															
		AD524	Instrumentation Amplifier	Analog Devices	√		√															
		AD587	Voltage Reference	Analog Devices	√		√															
		OP27	Operational Amplifier	Analog Devices	√		√															
		OP200	Operational Amplifier	Analog Devices	√		√															
		LT1024	Operational Amplifier	Linear Technology	√		√															
		UCC1806	Pulse Width Modulator Controller	Unitrode	√		√															
		OP420	Operational Amplifier	Analog Devices	√		√															
		DAC8508	8 bit DAC	Analog Devices	√		√															
		AFL2803RS3	DC-DC Converter	International Rectifier	√		√															
		F1D5	Optocoupler	Fairchild	√		√															
		HSDL-4420	Infrared Emitter	Agilent	√		√															
		HSDL-5240	Infrared PIN Diode	Agilent	√		√															
		Test Structure	5AM SiGe	IBM	√				√													
		Test Structure	7HP SiGe, Shift Regsiter	IBM	√				√													
		Test Structure	8HP SiGe	IBM	√				√													
		Test Structure	9HP SiGe	IBM	√				√													
		UT54LVDS217	Serializer	Aeroflex	√				√													
		RHrFPGA	FPGA	Honeywell	√				√													
		OMR9701	Solid State Relay	International Rectifier	√				√													
		SNJ14AL16	JFET	Interfet	√		√															
		WFC IV	CCD	e2v Technologies	√				√													
		SNAP	p-Channel CCD	Dalsa	√				√													
5, pp. 26-31	D. Meshel	AD524SD	Instrumentation Amplifier	Analog Devices	√			√														
		ISYE-1009RH	Shunt Regulator Diode	Intersil	√			√														
		ISL-72991RH	Low Dropout Regulator	Intersil	√			√														
		IS-139ASRH	Voltage Comparator	Intersil	√			√														
		RH1011MW	Voltage Comparator	Linear Technology	√			√														
		RH1013MW	Operational Amplifier	Linear Technology	√			√														
		OMR-185	Low Dropout Regulator	International Rectifier	√			√														
		HS-117	Voltage Regulator	Intersil	√			√														
		UC-1845	Pulse Width Modulator	Texas Instruments	√			√														
6, pp. 32-35	B. Posey	CLC401AJ	Operational Amplifier	National Semiconductor	√		√	√												√		
		JANS1N6642	Diode	Microsemi	√		√	√												√		
		AD1672-713F	12 bit ADC	Analog Devices	√		√	√												√		
		LM6161WG	Operational Amplifier	National Semiconductor	√		√	√												√		
		HS9-565ARH-Q	12 bit DAC	Intersil	√		√	√												√		
		HS9-117RH-Q	Voltage Regulator	Intersil	√		√	√												√		
		OP484AM/QMLR	Operational Amplifier	Analog Devices	√		√	√												√		
7, pp.. 36-41	R. Rivas	AD823AR	Operational Amplifier	Analog Devices	√		√	√														
		LM136-2.5	Reference Diode	National Semiconductor	√		√	√														
		LTC1417AGC	14 bit ADC	Linear Technology	√		√	√														
		MC35072	Operational Amplifier	Motorola	√		√	√														
		AD590	Temperature Sensor	Analog Devices	√		√	√														
		DG304	Analog Switch	Siliconix	√		√	√														
8, pp. 42-46	J. Seiler	LM124	Operational Amplifier	National Semiconductor	√		√	√														
9, pp. 47-53	R. Koga	72V3610	128kx36 FIFO	IDT	√						√		√	√								
		SN74V3690	32kx36 FIFO	Texas Instruments	√						√		√									
		FQV36110	128kx36 FIFO	HBA	√						√											
		RC28F640C3BC	64Mbit Flash	Intel	√						√		√									
		RC28F320C3BC	32Mbit Flash	Intel	√						√		√									
10, pp. 54-57	C. Poivey	HM628128	128kx8 SRAM	Hitachi		√					√											
11, pp. 58-61	T. Langley	TC58DVG02A1	1Gb, NAND Flash	Toshiba	√						√		√	√								
12, pp.62-67	S. Guertin	HY57V654020B	SDRAM	Hynix/Hyundai	√								√									
13, pp. 68-71	W. Wester	K9K2G08U0M	2Gb, NAND Flash	Samsung	√				√		√											
14, pp. 72-78	J. George	XQ1701L	1 Mbit PROM	Xilinx	√								√	√								
		XQR1701L	1 Mbit PROM	Xilinx	√								√	√								
		XQ17V16	16 Mbit PROM	Xilinx	√						√		√									
		XQR17V16	16 Mbit PROM	Xilinx	√						√		√									
15, pp. 79-84	D. Hiemstra	XC2V1000	SRAM FPGA	Xilinx	√				√		√											
		XC3S50	SRAM FPGA	Xilinx	√				√		√											
16, pp. 85-87	C. Hafer	Eclipse	FPGA	Aeroflex	√		√				√			√								
17, pp. 88-90	S. Clark	EP1C6Q240C8	SRAM FPGA	Altera	√		√							√								
18, pp. 91-95	F. Franco	ADG212	Analog Switch	Analog Devices	√															√		
		ADG412	Analog Switch	Analog Devices	√															√		
		DG212	Analog Switch	Maxim	√															√		
		MAX332	Analog Switch	Maxim	√															√		
		DG212	Analog Switch	Vishay	√															√		
		DG412	Analog Switch	Vishay	√															√		
19, pp. 96-103	N. Nowlin		Resolver to Digital Converter	Custom design	√		√				√			√			√					
20, pp. 104-109	M. Hartwell		ASIC Library	Aeroflex	√		√				√			√			√					
21, pp. 110-114	B. Pritchard		IEEE 1394 Firewire ASICs	Custom designs							√			√								
22, pp. 115-119	S. Kniffin	PE926C31	RS-422 Driver	Perigrine							√											
		PE926C32	RS-422 Reciever	Perigrine							√											
		HX6228	SRAM	Honeywell							√											
		RHrFPGA	FPGA	Honeywell							√											
23, pp. 120-124	C. Underwood	GP4020	GPS Reviever	Zarlink Semiconductor	√		√				√		√	√								
24, pp. 125-129	O. Coumar	ADXL150	MEMS Acclerometer	Analog Devices	√		√					√		√								
		SCA 600	MEMS Acclerometer	VIT	√		√															
25, pp. 130-136	T. Sumita		Various solar cells			√			√	√												
26, pp. 137-144	D. Soprea		Quantum-Well Semicinductor Laser		√		√															
27, pp. 145-150	B. von Przewoski		IUCF proton beam properties																		√	
28, pp. 151-155	E. Cascio		NPTC proton beam properties																		√	
29, pp. 156-159	M. McMahan		LBNL heavy ion beam properties																		√	
30, pp. 160-162	A. Prokofiev		TSL neutron beam properties																		√	

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REDW2003

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					Data		Total Ionizing Dose				Single Event Effects							Displacement Damage		Facilities	Standard	Environement
					Terrestrial	Flight	Co60		Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			
Paper No., Page No.	First Author	Part No.	Type	Manufacture				ELDRS														
1, pp. 1-5	S. McClure	LT1006A	Operational Amplifier	Linear Technology				√													√	
		LM136	Shunt Regulator Diode	National Semiconductor				√														
		LM158	Operational Amplifier	National Semiconductor				√														
		LM158	Operational Amplifier	Motorola				√														
		LT1963	Low Dropout Regulator	Linear Technology				√														
		LM3940	Low Dropout Regulator	National Semiconductor				√														
2, pp. 6-10	P. Layton	CS5016B	16 bit ADC	Crystal Semiconductor			√														√	
		ADS7805	16 bit ADC	Burr-Brown			√															
		ADS7809	16 bit ADC	Burr-Brown			√															
3, pp. 11-17	T. Sumita		Various solar cells		√	√			√	√											√	
4, pp. 18-23	L. Scheick	TC589100FT	1G bit, Flash	Toshiba	√		√				√		√	√							√	
		28F256K3	256 Mbit, Flash	Intel	√		√				√		√	√								
5, pp. 24-33	B. Pritchard	IN5665A	Zener Diode	Microsemi	√				√												√	
		2N2222A	NPN Transistor	Semicoa	√		√														√	
		2N2484	NPN Transistor	Motorola	√		√															
		2N2857A	NPN Transistor	Semicoa	√		√															
		2N2907A	PNP Transistor	Semicoa	√		√															
		2N3637	PNP Transistor	Semicoa	√		√															
		2N3700	NPN Transistor	Semicoa	√		√															
		4N49	Optocoupler	Micropac	√				√													
		AD768	16 biit DAC	Analog Devices	√		√															
		AD829	Operational Amplifier	Analog Devices	√		√	√														
		ADC1175	DC-DC Converter	Advanced Analog	√		√															
		AMA2805	DC-DC Converter	Advanced Analog	√		√	√														
		AMF2805D	DC-DC Converter	Advanced Analog	√		√	√														
		ARH2903.3S	DC-DC Converter	Advanced Analog	√		√															
		ARH2805S	DC-DC Converter	Advanced Analog	√		√															
		DG406	16 channel Multiplexer	Maxim	√		√															
		8585-8323	VCSEL	Emcore	√				√													
		HFE4083-322	VCSEL	Honeywell	√				√													
		IRFMG40	N-channel Power MOSFET	International Rectifier	√		√															
		LF2802A	N-channel MOSFET	M/A Com	√		√															
		LM124A	Operational Amplifier	National Semiconductor	√		√	√														
		LT1006A	Operational Amplifier	Linear Technology	√		√	√														
		LTC1157	MOSFET Driver	Linear Technology	√		√															
		LTC1604AIG	16 bit ADC	Linear Technology	√		√															
		MAX306	16 channel Multiplexer	Maxim	√		√															
		MAX539	12 bit DAC	Maxim	√		√															
		OPA687	Operational Amplifier	Burr-Brown	√			√														
		PSS-QP50-6-SM	Quadrant Photodiode	Pacific Silicon Sensor	√				√													
		UC1717	Stepper Motor Driver	Texas Instruments	√			√														
7, pp. 34-37	S. Aghara	MC1408-8	8 bit DAC	Motorola	√		√													√		√
8, pp. 38-42	J. Bings	AD9225RH	12 bit ADC	Honeywell	√		√															
		AD9225	12 bit ADC	Analog Devices	√		√															
8, pp. 43-56	J. Coss	ADC704	Analog Multiplexer	Analog Devices	√									√								
		MAX4617	Analog Multiplexer	Maxim	√									√								
		MAX313	Analog Switch	Maxim	√									√								
		MAX4503	Analog Switch	Maxim	√									√								
		MAX4528	Analog Switch	Maxim	√									√								
		MAX4583	Analog Switch	Maxim	√									√								
		AD5305BRM	8 bit ADC	Analog Devices	√									√								
		SPT7760	8 bit ADC	Signal Processing Technology	√						√											
		AD7821	8 bit ADC	Analog Devices	√						√			√								
		ADC1175	8 bit ADC	National Semiconductor	√						√			√								
		AD1674	12 bit ADC	Analog Devices	√						√			√								
		AD6640	12 bit ADC	Analog Devices	√						√			√								
		AD7472BRU	12 bit ADC	Analog Devices	√									√								
		AD7476CEB	12 bit ADC	Analog Devices	√									√								
		AD7854	12 bit ADC	Analog Devices	√									√								
		AD7858	12 bit ADC	Analog Devices	√									√								
		AD7888	12 bit ADC	Analog Devices	√									√								
		AD7892BR	12 bit ADC	Analog Devices	√									√								
		AD9042AST	12 bit ADC	Analog Devices	√									√								
		AD9233	12 bit ADC	Analog Devices	√						√			√								
		LTC1272	12 bit ADC	Linear Technology	√						√			√								
		AD9240AS	14 bit ADC	Analog Devices	√									√								
		AD7661	16 bt ADC	Analog Devices	√									√								
		LTC1604	16 bt ADC	Linear Technology	√									√								
		LTC1603	16 bt ADC	Linear Technology	√									√								
		LTC1608	16 bt ADC	Linear Technology	√									√								
		AD7714	24 bit ADC	Analog Devices	√						√			√								
		TSB12LV26PZT	Link 1394 Fire Wire OHCI Chipset	Texas Instruments	√								√									
		TSB41AB3PFP	Physical 1394 Fire Wire OHCI Chipset	Texas Instruments	√								√									
		CS4210WJG	Link 1394 Fire Wire OHCI Chipset	National Semiconductor	√								√	√								
		CS4103VHG	Physical 1394 Fire Wire OHCI Chipset	National Semiconductor	√								√	√								
		AD8151	Crossbar Switch	Analog Devices	√						√											
		AD7564	12 bit DAC	Analog Devices	√									√								
		AD8420	12 bit DAC	Analog Devices	√						√			√								
		MAX539	12 bit DAC	Maxim	√						√			√								
		AD7535	14 bit DAC	Analog Devices	√									√								
		AD768	16 bit DAC	Analog Devices	√						√											
		ADSP2187L	16 bit DAC	Analog Devices	√						√			√								
		ADSP2189M	16 bit DAC	Analog Devices	√						√			√								
		LTC1657	16 bit DAC	Linear Technology	√						√			√								
		AFL12005SX/CH	DC-DC Converter	Advanced Analog	√						√											
		AFL12012DX/CH	DC-DC Converter	Advanced Analog	√						√											
		AFL12015DX/CH	DC-DC Converter	Advanced Analog	√						√											
		AHF2805S	DC-DC Converter	Analog Devices	√									√								
		AMF2805S	DC-DC Converter	Analog Devices										√								
		DVHF2803R3SF	DC-DC Converter	Virginia Power Technology	√							√		√								
		DVHF28L5S/ES	DC-DC Converter	Virginia Power Technology	√									√								
		DVSA2815S/ES	DC-DC Converter	Virginia Power Technology	√									√								
		DVTR2815S/ES	DC-DC Converter	Virginia Power Technology	√																	
		LCM-120	DC-DC Converter	IPT	√						√											
		MDI13051RED12ZF	DC-DC Converter	Modular Devices Incorporated	√									√								

		MDI3051RED15ZF	DC-DC Converter	Modular Devices Incorporated	√									√							
		MDI3051RED15ZF	DC-DC Converter	Modular Devices Incorporated	√									√							
		MDI3051RES05ZF	DC-DC Converter	Modular Devices Incorporated	√						√										
		MDI13051RES12ZF	DC-DC Converter	Modular Devices Incorporated	√						√										
		MDI13051RES15ZF	DC-DC Converter	Modular Devices Incorporated	√						√										
		ADSP-21020	Digital Signal Processor	Analog Devices	√						√			√							
		RH21020	Digital Signal Processor	BAE	√						√										
		TSC21020F	Digital Signal Processor	Atmel	√						√										
		EP20K400E	FPGA	Alterra	√						√			√							
		REP20K400E	FPGA	Alterra	√						√			√							
		AN10E40	Analog FPGA	Anadigm	√						√			√							
		PALCE22V10	PLD	Cypress	√						√			√							
		ATF22V10	EEPLD	Atmel	√						√			√							
		GAL22V10/883	EEPLD	Lattice Semiconductor	√						√			√							
		SCD 4026-1	Highside Driver	Sensitron Semiconductor	√										√						
		SCD-4028-1	Lowside Driver	Sensitron Semiconductor	√										√						
		54ABT16245	Transceiver	National Semiconductor	√							√		√							
		SNJ54ABT16245A	Transceiver	Texas Instruments	√							√		√							
		SN54LVT162245A	Transceiver	Texas Instruments	√									√							
		SN74LVTH162245	Transceiver	Texas Instruments	√									√							
		UT54ACS1612245	Transceiver	UTMC	√									√							
		SN74LVT16245B	Transceiver	Texas Instruments	√									√							
		SN74LVTH16244B	Transceiver	Texas Instruments	√									√							
		54ABT16244	Transceiver	National Semiconductor	√									√							
		SNJ54ABT16244	Transceiver	Texas Instruments	√						√			√							
		SNJ54ABT16244B	Transceiver	Texas Instruments	√						√			√							
		SN74LVT245B	Tri-state Buffer	Texas Instruments	√						√			√							
		SNJ54LVTH16244A	Tri-state Buffer	Texas Instruments	√						√			√							
		SNJ54LVTH244A	Tri-state Buffer	Texas Instruments	√						√			√							
		SN74ALVC16244A	Tri-state Buffer	Texas Instruments	√									√							
		SN74LVC16244A	Tri-state Buffer	Texas Instruments	√									√							
		SN54LVC04AFK	Tri-state Buffer	Texas Instruments	√									√							
		DS10320	128k bit SRAM	Mitsubishi	√						√			√							
		HM62256	32k bit SRAM	Hitachi	√						√										
		HM65756	32k bit SRAM	Matra	√						√										
		0325404CT3A	256M bit SDRAM	IBM	√						√		√	√							
		HM5225405B	256M bit SDRAM	Hitachi	√								√	√							
		HYS7V56420	256M bit SDRAM	Hitachi	√								√	√							
		KM44S32030A	256M bit SDRAM	Samsung	√								√	√							
		KM44S32030B	128M bit SDRAM	Samsung	√								√	√							
		KM44S64230A	128M bit SDRAM	Samsung	√						√		√	√							
		KM44S64230D	256M bit SDRAM	Samsung	√						√			√							
		KM444V16004B	16M x 4 DRAM	Samsung	√						√			√							
		ACT-F2M32A	2M x 32 NVRAM	Aeroflex	√						√			√							
		SDTNF-12	64M x 8 NVRAM	SND	√						√			√							
		TC58512FT	64M x 8 NVRAM	Toshiba	√						√			√							
		Pentium III	Microprocessor	Intel	√						√		√	√							
		PPC750	Microprocessor	IBM	√																
		XPC750	Microprocessor	Motorola	√																
		LSP2916	High Voltage Driver	Agere Systems	√						√			√							
		PE9301	Prescaler	Peregrine Semiconductor	√							√									
			Active Pixel Sensor	Photobit	√									√							
		Test Structure	Prescaler 5HP SiGe	IBM	√						√	√									
		AMP01	Instrumentation Amplifier	Analog Devices	√									√							
		INA117	Difference Amplifier	Burr-Brown	√									√							
		LM124A	Operational Amplifier	National Semiconductor	√						√										
		Mii42142	Power Operational Amplifier	Micropac	√						√			√							
		OP16	Operational Amplifier	Analog Devices	√									√							
		OP37	Operational Amplifier	Analog Devices	√									√							
		OP42	Operational Amplifier	Analog Devices	√									√							
		Mii53124	Power MOSFET Optocoupler	Micropac	√									√							
		Mii53253	Power MOSFET Optocoupler	Micropac	√									√							
		IL710	Isolator	Non Volatile Electonics	√						√			√							
		X9C503	Digital Potentiometer	Xilinx	√						√			√							
		MH08AFLMX2350	Frequency Synthesizer	National Semiconductor	√									√							
		RF2670	Automatic Gain Control	RF Micro	√									√							
		UC1842JG	Pulse Width Modulator Controller	Unitrode	√									√							
		LM2651	Switching Regulator	National Semiconductor	√						√										
		LP3470	Voltage Supervisor	National Semiconductor	√							√									
		MSK5042	Switching Regulator	MS Kennedy	√																
		HS139	Voltage Comparator	Harris Semicondcutor	√									√							
		LM139	Voltage Comparator	National Semiconductor	√									√							
		CNP402	Voltage Comparator	Analog Devices	√									√							
		MAX975EAU	Voltage Comparator	Maxim	√									√							
		LM119	Voltage Comparator	National Semiconductor	√						√										
		MS-SW16-8S	Myrinet Crossbar Switch	Myrinet	√						√		√								
		Lanai9	Myrinet NIC Protocol Processor	Myrinet	√						√		√								
		SerDeser	MYR12 Serializer-Deserializer	Myrinet	√						√										
		PCIDMA	Mrinet PCI to DMA	Myrinet	√						√										
		VCS7146RH	Myrinet Transceiver	Myrinet	√						√										
		K7N80360M	SRAM	Myrinet	√						√										
		MTX8501	Transmitter	Emcore	√						√										
		MTX8501	Receiver	Emcore	√						√										
		HCPL6651	Optocoupler	Agilent	√							√									
		P2824	Optocoupler	Hamamatsu	√							√									
		66099	Optocoupler	Micropac	√							√									
		4N49	Optocoupler	Micropac	√							√									
		4N49S	Optocoupler	Micropac	√							√									
		6N140	Optocoupler	Micropac	√							√									
		Mii53124	Power MOSFET Optocoupler	Micropac	√							√									
		Mii53250	Optocoupler Relay	Micropac	√							√									
		Mii53253	Power MOSFET Optocoupler	Micropac	√							√									
		Mii53258	Optocoupler Relay	Micropac	√							√									
9, pp. 57-64	D. Cochran	SG7805	Voltage Regulator	Linfinity	√		√														
		SG7815	Voltage Regulator	Linfinity	√		√														
		SG7815	Voltage Regulator	Linfinity	√		√														
		LM139	Voltage Comparator	National Semiconductor	√		√														
		LP2951	Voltage Regulator	National Semiconductor	√		√														
		MIC29302	Low Dropout Voltage Regulator	Micrel	√		√														
		LM2651MTC-ADJ	Switching Regulator	National Semiconductor	√		√														
		OP27ARC	Operational Amplifier	Analog Devices	√			√													
		OP97	Operational Amplifier	Analog Devices	√			√													
		OP221	Operational Amplifier	Analog Devices	√			√													
		OP296	Operational Amplifier	Analog Devices	√			√													
		AD743	Operational Amplifier	Analog Devices	√			√													
		AD822	Operational Amplifier	Analog Devices	√			√													
		LM6144	Operational Amplifier	National Semicionductor	√			√													
		LP2953	Voltage Regulator	National Semicionductor	√			√													
		LM193	Voltage Comparator	National Semicionductor	√			√													
		AD625	Instrument Amplifier	Analog Devices	√			√													
		AD625	Analog Switch	Analog Devices	√			√													
		MAT02	NPN Transistor Pair	Analog Devices	√			√													
		MAT03	PNP Transistor Pair	Analog Devices	√			√													
		AD5334	8 bit DAC	Analog Devices	√		√														
		P140	Power Controller	Leach International	√		√														
		TPS9103	Power Supply	Texas Instruments	√		√														
			R-S Encoder	AMI	√		√														
		LTC1657CGN	16 bit DAC	Linear Technology	√		√														
		ADC1175CIJM	8 bit DAC	National Semiconductor	√		√														
		HV583	Serial to Parallel Converter	Supertek	√		√														
		MRX8501	Fiber Optic Receiver	Emcore	√													√			
		MTX8501	Fiber Optic Transmitter	Emcore	√													√			
		MI66099	Optocoupler	Micropac	√													√			
		MI66099	Optocoupler	Micropac	√													√			
		CO-566	Oscillator	Vectron	√				√									√			
		CO-718S	Oscillator	Vectron	√				√												
		AD7664	16 bit ADC	Analog Devices	√				√												
		ColdFire	Microprocessor	Motorola	√				√												
		SH-4	Microprocessor	Hitachi	√				√												
		GP2021	GPS correlator	Zarlink Semiconductor	√				√												
10, pp. 65-76	M. O'Bryan	AD623	Operational Amplifier	Analog Devices	√							√		√							
		LM124	Operational Amplifier	National Semicinductor	√							√		√							
		LM193	Voltage Comparator	Texas Instruments	√							√		√							
		LMC6484	Operational Amplifier	National Semicinductor	√							√		√							
		LT1128	Operational Amplifier	Linear Technology	√							√		√							
		OP293	Operational Amplifier	Analog Devices	√							√		√							
		OP42	Operational Amplifier	Analog Devices	√							√		√							
		OP727	Operational Amplifier	Analog Devices	√							√		√							
		OPA2347	Operational Amplifier	Texas Instruments	√							√		√							
		HV583	Serial to Parallel Converter	Supertek							√			√							
		LTC1149	Switching Regulator	Linear Technology								√		√							
		MSK5042	Switching Regulator	National Semicinductor								√	√								
		IRF640	N-channel Power MOSFET	International Rectifier											√	√					
		IRLL110	N-channel Power MOSFET	International Rectifier											√	√					
		ATF22V10	EEPLD	Atmel					√				√	√							
		MCF5307	Microprocessor	Motorola							√		√	√							
		SG1525A	Pulse Width Modulator Controller	Linfinity							√		√								
		SH-4	Microprocessor	Hitachi							√		√								
			R-S Encoder	AMI Semiconductor							√			√							
		SPT7760	8 bit ADC	Signal Processing Technology							√										
		Test Structure	Transistor, 5HP SiGE HBT	IBM							√										
		Test Structure	PRN, 7HP SiGE HBT	IBM							√										
		Test Structure	Transistor, 7HP SiGE HBT	IBM							√										
		AD8151	8 bit ADC	Analog Devices								√	√								
		GP2021	GPS correlator	Zarlink Semiconductor							√		√	√							
		TPS9103	Power Supply	Texas Instruments								√		√							
		KM48C8000	64M bit DRAM	Samsung							√		√	√							
		AD5334	8 bit DAC	Analog Devices										√							
		AD7414	Temperature Sensor	Analog Devices										√							
		AD7664	16 bit ADC	Analog Devices										√							
		TMP36	Temperature Sensor	Analog Devices										√							
		Test Structure	Ring Oscillator, 5HP BiCMOS	IBM										√							
		CO566	Oscillator	Vectron										√							
		CO718S	Oscillator	Vectron										√							
11, pp. 77-82	R. Koga	KM44V16004BKμμ	64 Mbit DRAM	Samsung	√						√			√							
		KM44V16004CK	64 Mbit DRAM	Samsung	√						√			√							
		KM44V16004DK	64 Mbit DRAM	Samsung	√						√			√							
		KM44S32030T	128 Mbit SDRAM	Samsung	√						√		√	√							
		KM44S32030AT	128 Mbit SDRAM	Samsung	√						√		√	√							
		KM44S32030BT	128 Mbit SDRAM	Samsung	√						√		√	√							
		28F320C3BA	32 Mbit Flash		√						√		√								
		28F320C3BC	32 Mbit Flash		√						√										
		LM139	Voltage Conparator	National Semiconductor	√							√									
12, pp. 83-88	J. George	μPD4382322-A	256k x 32 SRAM	NEC	√						√			√							
		TC55VD836	256k x 36 SRAM	Toshiba	√						√			√							
		IDT71V67603	256k x 36 SRAM	IDT	√						√			√							
		IDT71V424	512k x 8 SRAM	IDT	√						√			√							
		CY7C1360A	256k x 36 SRAM	Cypress	√						√			√							
		K7M801825B	512k x 9 SRAM	Samsung	√						√			√							
		AS5SS256K36	256k x 36 SRAM	Austin Semiconductor	√						√			√							
13, pp. 89-91	S. Shojab-Ardalan	PC10	Ultracapcitor	Maxwell	√		√		√												
		PC100	Ultracapcitor	Maxwell	√		√		√												
		PC1000	Ultracapcitor	Maxwell	√		√		√												
14, pp. 92-97	C. Yui	X-2V1000	SRAM FPGA	Xilinx	√						√		√	√							
15, pp. 98-101	T. Langley		512MB SDRAM	Samsung	√						√		√	√							
			512MB SDRAM		√						√		√	√							
16, pp. 102-107	C. Poivey	MDM1400G-120	4M x 1 DRAM	Hitachi	√	√					√										
17, pp. 108-112	D. Hiemstra	ZFx86	Microcontroller	ZFMicroSolutions	√				√		√		√	√							
18, pp. 113-120	L. Selva	IRHYG30CMSE	Power MOSFET	International Rectifier	√										√	√					
		IRFMG40	Power MOSFET	International Rectifier	√										√	√					
		IRHY7434	Power MOSFET	International Rectifier	√										√	√					
		RFP4N100	Power MOSFET	Fairchild	√										√	√					
		APT10088HVR	Power MOSFET	Advanced Power Technology	√										√	√					
		APT1004RCN	Power MOSFET	Advanced Power Technology	√										√	√					
19, pp. 121-126	M. Savage	LM124A	Operational Amplifier	National Semiconductor	√							√									
		LM111	Voltage Reference	National Semiconductor	√							√									
		LM6144	Operational Amplifier	National Semiconductor	√							√									

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Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose				Single Event Effects							Displacement Damage		Facilities	Standard	Environment
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			
1, pp. 1-6	S. Duzellier	HM62256	256k bit SRAM	Hitachi		√			√													
		HM65756	256k bit SRAM	Matra-MHS		√			√													
2, pp. 7-13	B. Pritchard	SA2901		Sandia		√			√													
		DG-181	Anlaog Switch			√			√													
		4N49	Optocoupler	Texas Instrument		√												√				
			1M bit x 4 DRAM	OKI		√					√											
			Solid State Power Switch			√						√										
			GPS Reciever	Motorola		√								√								
		GEMIII	GPS Reciever	Collins		√					√			√								
			Stellar Reference Unit			√										√						
		LUNA-C	DRAM	IMC		√					√											
			GPS Reciever	Blackjack		√								√								
3, pp. 14-17	E. Mikkelson																					√
4, pp. 18-23	G. Hopkinson	Star-250	512x512 Active Pixel Sensor	FillFactory	√		√															
5, pp. 24-31	M. Ott		Various Optical Fiber		√		√											√	√			
6, pp.32-40	J. Howard	Crossbar Switch	Switchboard, MS-SW16-8S	Myricom	√				√		√		√	√								
		Crossbar Switch	Switchboard, MS-SW16-8S	Myricom	√				√		√		√	√								
		NIC	NIC, M3S-PC164B-2	Myricom	√				√		√		√	√								
		LANai9	NIC, 9.1	Myricom	√				√		√		√	√								
		SerDeser	NIC, 1.1	Myricom	√				√		√		√	√								
		PCIDMA	NIC, 1.3	Myricom	√				√		√		√	√								
		Transceiver	NIC, VCS7146RH	Vitesse	√				√		√		√	√								
		SRAM	NIC, K7N803601M	Samsung	√				√		√		√	√								
7, pp. 41-44	D. Gingrich	EPF10K50EQC240-1	CPLD	Alterra	√		√															
		XC2S150-5PQ240C	SRAM FPGA	Xilinx	√		√															
8, pp. 45-50	M. Ceschia	EP20K400E	SRAM FPGA	Alterra	√						√		√									
9, pp. 51-57	D. Hiemstra	Pentium 4	Microprocessor	Intel	√				√		√		√	√								
		Pentium III	Microprocessor	Intel	√				√		√		√	√								
		Low Power MMX	Microprocessor	Intel	√				√		√		√	√								
10, pp. 58-61	J. Benedetto	Wafer Tech 0.25µm	Various Flip Flop Structure	Aeroflex	√						√			√			√					
11, pp. 62-66	D. Nguyen	ACT-F2M32A	2Mbit x 32 Flash	Aeroflex	√		√				√		√	√								
		SDTNF-512	64Mbit x 8 NAND Flash	SanDisk	√		√				√		√	√								
		TC58512FT	64Mbit x 8 NAND Flash	Toshiba	√		√				√		√	√								
12, pp. 67-74	R. Koga	54ABT16244	16 bit Tri-state Buffer	National Semiconductor	√									√								
		SNJ54ABT16244	16 bit Tri-state Buffer	Texas Instrument	√							√		√								
		54ABT16245	16 bit Tri-state Transciever	National Semiconductor	√									√								
		SNJ54ABT16245A	16 bit Tri-state Transciever	Texas Instrument	√									√								
		SN74LVT162245A	16 bit Tri-state Transciever	Texas Instrument	√							√		√								
		SN74LVT16244B	16 bit Tri-state Buffer	Texas Instrument	√							√		√								
		SN74LVT16245B	16 bit Tri-state Transciever	Texas Instrument	√							√		√								
		SN74LVT244B	8 bit Tri-state buffer	Texas Instrument	√							√		√								
		SN74LVT245B	8 bit Tri-state buffer	Texas Instrument	√							√		√								
		SN74LVTH162245	16 bit Tri-state Transciever	Texas Instrument	√							√		√								
		SNJ54LVTH16244A	16 bit Tri-state Buffer	Texas Instrument	√							√		√								
		SNJ54LVTH16245B	16 bit Tri-state Transciever	Texas Instrument	√							√		√								
		SNJ54LVT244A	8 bit Tri-state buffer	Texas Instrument	√							√		√								
		UT54ACS164245S	16 bit Tri-state Transciever	Aeroflex	√							√		√								
		SN74ALVC16244A	16 bit Tri-state Buffer	Texas Instrument	√									√								
		SN74LVC16244A	16 bit Tri-state Buffer	Texas Instrument	√									√								
13, pp. 75-81	M. Savage	LM124A	Operational Amplifier	National Semiconductor	√							√										
		LM111	Voltage Comparator	National Semiconductor	√							√										
14, pp. 82-105	M. O'Bryan	LM124	Operational Amplifier	National Semiconductor	√							√										
		LM119	Voltage Comparator	National Semiconductor	√							√										
		PALCE22V10	PLD	Cypress	√								√	√								
		ATF22V10B	EEPLD	Atmel	√							√		√	√	√						
		GAL22V10/883	Logic Array	Lattice	√									√	√	√						
		AN10E40	Analog FPGA	Anadigm	√									√	√	√						
		MDI3051RES05ZF	DC-DC Converter	Modular Devices Inc.	√							√										
		MDI3051RED12ZF	DC-DC Converter	Modular Devices Inc.	√							√										
		MDI3051RED15ZF	DC-DC Converter	Modular Devices Inc.	√							√										
		LM2651	Switching Regulator	National Semiconductor	√							√		√								
		MSK5042	Switching Regulator	MS Kennedy	√										√							
		LP3470	Voltage Supervisor	National Semiconductor	√							√										
		AD7714	24 bit ADC	Analog Devices	√		√				√			√								
		AD7821	8 bit ADC	Analog Devices	√						√			√								
		AD9223	12 bit ADC	Analog Devices	√						√											
		LTC1272	12 bit ADC	Linear Technology	√		√				√			√								
		LTC1657	16 bit ADC	Linear Technology	√						√			√								
		ADC1175	8 bit ADC	National Semiconductor	√						√			√								
		TSB12LV26PZT	Link Firewrie Chipset	Texas Instrument	√						√		√									
		TSB41AB3PFP	Physical Firewrie Chipset	Texas Instrument	√								√									
		CS4210VJG	Link Firewrie Chipset	National Semiconductor	√								√	√								
		CS4103VHG	Physical Firewrie Chipset	National Semiconductor	√								√	√								
		M3-SW16-8S	Myrinet Crosspoint Switch	Myricom	√						√		√	√								
		Lanai9	Myrinet NIC Protocol Processor	Myricom	√						√		√	√								
			Myrinet Serilaizer-Deserializer	Myricom	√						√		√	√								
			Myrinet PCI to DMS	Myricom	√						√		√	√								
		VCS7146RH	Myrinet Transceiver	Vitesse	√						√		√	√								
		K7N803601M	SRAM	Samsung	√						√		√	√								
		AD8151	Crossbar Switch	Analog Devices	√							√		√				√				
		LSP2916		Agere Systems							√			√								
			Active Pixel Sensor	Photobit								√		√								
		Test Structure	Prescaler	IBM							√											
		PE9301	Prescaler	Peregrine							√											
		MTX8501	Transmitter	Emcore								√										
		MRX8501	Receiver	Emcore								√										
		Pentium III	Microprocessor, various frequencies	Intel							√		√	√								
		LTC1604	16 bit ADC	Linear Technology										√								
		LTC1605	16 bit ADC	Linear Technology										√								
		LTC1608	16 bit ADC	Linear Technology										√								
		ADG452	Analog Switch	Analog Devices										√								
		ICL7662	Voltage converter	Intersil										√								
		XA1	ASIC	AMS										√								
		PCA80C522	Microprocessor	Phillips										√								
		CCD486	4kx4k CCD Detector	British Aerospace														√				
		TIL25	GaAs LED	Texas Instrument														√				
		TIL601	Opto Transistor	Texas Instrument														√				
		4N49	Optocoupler	Micropac														√				
		AD6640	12 bit ADC	Analog Devices			√															
		FDN361AN	30V N channel	Fairchild			√															
		NDS352A	30V P channel	Fairchild			√															
		IRLML2803	30V N channel	International Rectifier			√															
		IRLML5103A	30V P channel	International Rectifier			√															
		2N5114	30V P channel JFET	New England			√															
15, pp. 106-108	K. Warren	DVSA2815S/ES	+15V Outout, 6W, DC-DC Converter	VPT Inc.	√							√				√						
		DVTR2815S/ES	+15V Output, 40W, DC-DC Converter	VPT Inc.	√							√				√						
		DVHF2815S/ES	+15V Output, 20W, DC-DC Converter	VPT Inc.	√							√				√						
		AHF2805S	+5V Output, 12W, DC-DC Converter	Advanced Analog	√							√				√						
		AMF2805S	+5V Output, 12W	Advanced Analog	√							√				√						
		AMF2805S	+5V Output, 12W, Radiation Hardened	Advanced Analog	√							√				√						
16. pp. 109-114	J. Lehman	28F/28K Series	DC-DC Converter	Interpoint	√		√		√													
17. pp. 115-119	N. Boetti	L4913	Voltage Regulator	ST Microelectronics	√		√					√										
18. pp. 120-126	Y. Choquette		Dry Lithium Battery		√				√													
19, pp. 127-130	Z. Jin	5HP/7HP	SiGe HBT BiCMOS process	IBM	√				√													
20, pp. 131-137	C. Yui	LM139	Voltage Comparator Dual	National Semiconductor	√		√	√														
		LM139	Volatge Comparator Quad	National Semiconductor	√		√	√														
		LT1019-2.5	2.5V Voltage Reference	Linaer Technology	√		√	√														
		LM185-1.2	1.25V Voltage Reference	National Semiconductor	√		√	√														
		LM134	Temperature Transducer	National Semiconductor	√		√	√														
21, pp. 138-144	J. Gillberg	FSGL033	30V n-channel Power MOSFET	Fairchild	√														√			
		FSGL035	60V n-channel Power MOSFET	Fairchild	√														√			
		FSPL033	30V n-channel Power MOSFET	Fairchild	√														√			
		FSL13A0	100V n-channel Power MOSFET	Fairchild	√														√			
		FSL9130	100V n-channel Power MOSFET	Fairchild	√														√			
		FSL923A0	200V n-channel Power MOSFET	Fairchild	√														√			
		2N7397	250V n-channel Power MOSFET	Fairchild	√														√			
		FSL33A0	400V n-channel Power MOSFET	Fairchild	√														√			
		FSL430	500V n-channel Power MOSFET	Fairchild	√														√			
		FRL130	100V n-channel Power MOSFET	Fairchild	√														√			
		FRL9130	100V n-channel Power MOSFET	Fairchild	√														√			
		FRL234	250V n-channel Power MOSFET	Fairchild	√														√			
22, pp. 145-151	S. Mulford	G28F640J5-150	64 Mbit NOR Flash	Intel	√												√					
		K4E640812D-TC60	64 Mbit DRAM	Samsung	√												√					
		SDC-14616T-392	Resolver to Digital Converter	Data Devices Corporation	√												√					
		MC6012	Crytal Oscillator	Oak Corning	√												√					
		IR2110	Power MOSFET Driver	International Rectifier	√												√					
		CS5101	Regulator	On Semiconductor	√														√			
		GC80503CSM66166	Pentium 166	Intel	√												√					
		CA91C142-33CE	PCI-VME Bridge	Tundra	√												√					
		FW82371EB-SL2MY	Southbridge	Intel	√												√					
		CY2278PAC3L	Clock Synthesizer/Driver	Cypress	√												√					
		ADSP-2181KS-133	Digital Signal Proccessor	Analog Devices	√												√					
		MC68HC711	8 bit Microcontroller	Motorola	√												√					
		IRFS33N15D	Power MOSFET	International Rectifier	√												√					
		IRF1BC40GLC	Power MOSFET	International Rectifier	√												√					
		APT6021BFLL	Power MOSFET	Advanced Power Technology	√												√					
23, pp. 152-159	P. Chanbaud	MUR160T3	Rectifier Diode	Motorola	√		√	√														
		AD711KR	Operational Amplifier	Analog Devices																		
24, pp. 160-164	W. Hajdas		PSI proton beam properties																	√		
25, pp. 165-170	G. Vizkelethy		Radiation Effects Microscopy	Sandia																√		
26, pp. 171-176	A. Fernandez		SCK-CEN Gamma Facility																	√		
27, pp. 177-180	W. Abare	LM2941J	Low Dropout Voltage Regulator	National Semiconductor	√		√	√														
		LM185BY-2.5	Voltage Reference	National Semiconductor	√		√	√														
28, pp. 181-186	S. McCready	XTE-190-25A	Pressure Transducer	Kulite Semiconductor	√		√												√			
		7624B-500T	Accelerometer	Endevco	√		√												√			
		2255B-1	Accelerometer	Endevco	√		√												√			
		Type K & E	Thermocouple	Omega	√		√												√			
		44031	Thermistor	Omega	√		√												√			
29, pp. 187-193	C. Marshall	Custom	Active Pixel Sensor Array	Photobit	√							√										

Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.

REDW2001

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Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose				Single Event Effects							Displacement Damage		Facilities	Standard	Environment
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			
1, pp. 1-5	S. McClure	RH1009	Voltage Reference +2,5V	Linear Technology	√		√	√														
		HS1009	Voltage Reference +2,5V	Intersil	√		√	√														
		HS117	Voltage Regulator	Intersil	√		√	√														
		L4913	Low Dropout Voltage Regulator	ST Microelectronics	√		√	√														
2, pp. 6-13	R. Koga	KM44S64230A	256 Mbit SDRAM	Samsung	√						√		√	√								
		0325404CT3A	256 Mbit SDRAM	IBM	√						√		√	√								
		HM5225405B	256 Mbit SDRAM	Hitachi	√						√		√	√								
		HY57V56420	256 Mbit SDRAM	Hyundia	√						√		√	√								
		KM44S32030A	128 Mbit SDRAM	Samsung	√						√		√	√								
		KM44S32030B	128 Mbit SDRAM	Samsung	√						√		√	√								
3, pp. 14-18	D. Guckenberger	CLC425AJP	Operational Amplifier	National Semiconductor	√		√															
		AD620BN	Operational Amplifier	Analog Devices	√		√															
		LMC6061AIN	Operational Amplifier	National Semiconductor	√		√															
		TLV27701P	Operational Amplifier	Texas Instruments	√		√															
4, pp. 19-25	P. Duggan	ADSP 21020	Digital Signal Processor	Analog Devices	√		√				√			√			√					
		RH21020	Digital Signal Processor	BAE Systems	√		√				√						√					
		TSC21020F	Digital Signal Processor	Atmel	√		√				√						√					
5, pp. 26-31	B. Alaskiewicz	IS-139ASRH	Voltage Comparator	Intersil	√							√		√								
		IS-705RH	Microprocessor Reset	Intersil	√							√		√								
		IS-1009RH	Voltage Reference +2,5V	Intersil	√							√		√								
		IS-1715ARH	Power MOSFET Driver	Intersil	√							√		√								
		IS-1845ASRH	Pulse Width Modulator	Intersil	√							√		√								
		IS-2100ARH	Half Bridge Driver	Intersil	√							√		√								
		HS-4080ARH	Full Bridge Driver	Intersil	√							√		√								
6, pp. 32-37	D. Hiemstra	Pentium MMX	Microprocessor	Intel	√				√		√		√	√								
		Low Power MMX	Microprocessor	Intel	√				√		√		√	√								
7, pp. 38-47	J. Howard	Pentium III	Microprocessor	Intel	√		√				√		√									
		K7	Microprocessor	Advanced Micro Devices	√		√				√		√									
8, pp. 48-50	K. Hirose	Custom	128k bit SRAM	Mitsubishi	√		√				√											
9, pp.51-56	M. Menichelli	ADSP 2187	Digital Signal Proccessor	Analog Devices	√						√		√	√								
		ADSP 2189	Digital Signal Proccessor	Analog Devices	√						√		√	√								
10, pp. 57-61	D. Nguyen	FM1608	Ferroelectric RAM	Ramtron	√						√											
		FM1808	Ferroelectric RAM	Ramtron	√						√											
11, pp. 62-66	L. Scheick	X9C503	8 bit DAC	Xicoe	√						√											
		AD8420	12 bit DAC	Analog Devices	√						√											
		MAX539	12 bit DAC	Analog Devices	√						√											
		AD768	16 bit DAC	Maxim	√						√											
12, pp. 67-71	J. Benedetto	Prototype	LVDS Driver	Aeroflex	√		√					√		√								
		Prototype	LVDS Receiver	Aeroflex	√		√					√		√								
13, pp. 72-76	R. Lacoe		0.35µm CMOS Process	TSMC	√		√															
14, pp. 77-81	C. Castaneda		CNL at UC Davis, proton beam																	√		
15, pp. 82-99	M. O'Bryan	AD1674	12 bit ADC	Analog Devices	√						√			√								
		AD6640	12 bit ADC	Analog Devices	√						√			√								
		SPT7760	8 bit DAC	Signal Processing Tech	√						√		√	√								
		AFL12005SX/CH	DC-DC Converter	Lambda	√							√			√							
		AFL12012DX/CH	DC-DC Converter	Lambda	√							√			√							
		AFL12015DX/CH	DC-DC Converter	Lambda	√							√			√							
		DVHF2803R3SF	DC-DC Converter	Virginia Power Technology	√							√			√							
		LCM-120		Interpoint	√				√			√										
		MDI3051RES05ZF		Modular Devices Inc.	√							√			√							
		MDI3051RES12ZF		Modular Devices Inc.	√							√			√							
		MDI3051RES15ZF		Modular Devices Inc.	√							√			√							
		LM124	Operational Amplifier	National Semiconductor	√							√										
		LM139	Voltage Comparator	National Semiconductor	√							√										
		HS139	Voltage Comparator	Harris	√							√										
		LM148	Operational Amplifier	Fairchild Semiconductor	√				√			√										
		Pentium III	Microprocessor	Intel	√				√		√			√								
		AMD K7	Microprocessor	Advanced Micro Devices	√						√		√	√								
		IL710	Isolator	Non Volatile Electronics	√							√		√								
		Mii42142	Power Operational Amplifier	Micropac	√							√				√						
		Mii53124	Power MOSFET Optocoupler	Micropac	√							√				√						
		Mii53250	Relay	Micropac	√							√				√						
		Mii53253	Power MOSFET Optocoupler	Micropac	√							√				√						
		Mii53258	Relay	Micropac	√							√				√						
		6651	Optocoupler	Agilent	√							√										
		OD800	LED	Optodiode	√													√				
		P2824	Optocoupler	Hamamatsu	√													√				
		66099	Optocoupler	Micropac	√													√				
		4N49	Optocoupler	Micropac	√													√				
		4N49S	Optocoupler	Micropac	√													√				
		6N134	Optocoupler	Micropac	√													√				
		6N140	Optocoupler	Micropac	√													√				
		Mii42142	Power Operational Amplifier	Micropac	√							√				√		√				
		Mii53124	Power MOSFET Optocoupler	Micropac	√							√						√				
		Mii53250	Relay	Micropac	√							√						√				
		Mii53253	Power MOSFET Optocoupler	Micropac	√							√						√				
		Mii53258	Relay	Micropac	√							√						√				
		CMP402	Voltage Comparator	Analog Devices	√									√								
		OP16	Operational Amplifier	Analog Devices	√									√								
		OP37	Operational Amplifier	Analog Devices	√									√								
		OP42	Operational Amplifier	Analog Devices	√									√								
		AD7535	14 bit DAC	Analog Devices	√									√								
		AD7564	12 bit DAC	Analog Devices	√									√								
		AD7664	16 bit ADC	Analog Devices	√									√								
		AD7854	12 bit ADC	Analog Devices	√									√								
		AD7858	12 bit ADC	Analog Devices	√									√								
		AD7888	12 bit ADC	Analog Devices	√									√								
		ADG704	Analog Multiplexer	Analog Devices	√									√								
		AMP01	Instrumentation Amplifier	Analog Devices	√									√								
		INA117	Differential Amplifier	Burr-Brown	√									√								
		MAX313	Analog Switch	Maxim	√									√								
		MAX4503	Analog Switch	Maxim	√									√								
		MAX4528	Analog Switch	Maxim	√									√								
		MAX4583	Analog Switch	Maxim	√									√								
		MAX4617	Analog Multiplexer	Maxim	√									√								
		MAX584	Voltage Reference	Maxim	√									√								
16, pp. 100-105	K. Warren	SN54LVC04	Hex Inverter	Texas Instruments	√									√								
		AD5305	8 bit DAC	Analog Devices	√		√							√								
		AD621	Instrumentation Amplifier	Analog Devices	√		√															
		AD654	Voltage to Frequency Converter	Analog Devices	√		√															
		AD7472	12 bit ADC	Analog Devices	√		√							√								
		AD7476	12 bit ADC	Analog Devices	√									√								
		AD7892	12 bit ADC	Analog Devices	√									√								
		AD829	Operational Amplifier	Analog Devices	√		√															
		AD9042	12 bit ADC	Analog Devices	√									√								
		AD9240	14 bit ADC	Analog Devices	√									√								
		JANTXV2N6790	Power MOSFET	Intersil	√		√															
		LM158	Operational Amplifier	Motorola	√		√															
		LMX2350	Frequency Synthesizer	National Semiconductor	√									√								
		LT1054	Switchmode Voltage Regulator	Linear Technology	√		√															
		MAX975	Voltage Comparator	Maxim	√		√							√								
		RF2670	Automatic Gain Control	RF Micro Devices	√									√								
		4026-1	High-side Driver	Sensitron Semiconductor	√										√							
		4028-1	Low-side Driver	Sensitron Semiconductor	√										√							
		UC1842	Pulse Width Modulator	Unitrode	√									√								
17, pp. 106-126	J. Coss	ADG441	Analog Switch	Analog Devices	√									√								
		HI509	Analog Multiplexer	Harris Semiconductor	√						√			√								
		HSO1840RHQ	Analog Multiplexer	Harris Semiconductor	√						√											
		MUX28	Analog Multiplexer	Analog Devices	√						√											
		Test Structure	D type Flip Flops Fab 6 ASIC	Space Electronics Inc.	√						√			√								
			Latchup Protection Circuit	Space Electronics Inc.	√									√								
			TES ASIC	Space Electronics Inc.	√									√								
		UT75ER	ASIC	UTMC	√						√											
		MX7225UQ	8 bit ADC	Maxim	√									√								
		AD1672	12 bit ADC	Analog Devices	√						√											
		AD574S	12 bit ADC	Analog Devices	√						√			√								
		AD9042	12 bit ADC	Analog Devices	√									√								
		AD9240	14 bit ADC	Analog Devices	√						√			√								
		LTC1419	14 bit ADC	Linear Technology	√									√								
		AD978	16 bit ADC	Analog Devices	√						√											
		CS5016	16 bit ADC	Crystal Semiconductor	√									√								
		LTC1604	16 bit ADC	Linear Technology	√									√								
		MAX195	16 bit ADC	Maxim	√						√			√								
		8408	8 bit DAC	Space Electronics Inc.	√						√											
		DAC08	8 bit DAC	Analog Devices	√									√								
		AD571S	10 bit DAC	Analog Devices	√									√								
		AD7945	12 bit DAC	Analog Devices	√									√								
		DAC8222	12 bit DAC	Analog Devices	√							√		√								
		MX7545	12 bit DAC	Maxim	√									√								
		M3G2805D	DC-DC Converter	Magnitude-3	√						√											
		MTR2805SSF	DC-DC Converter	Interpoint	√									√								
		MTR2815SF	DC-DC Converter	Interpoint	√									√								
		RH21020	Digital Signal Processor	Lockheed Martin	√						√											
		SMJ320C50GFAM50	Digital Signal Processor	Texas Instruments	√						√			√								
		LMRH4Kx9	4K x 9 FIFO	Lockheed Martin	√						√											
		A1020	FPGA	Actel	√						√											
		DL5256			√						√											
		RT54SX16	FPGA	Actel	√						√											
		RT54SX32	FPGA	Actel	√						√			√								
		CY37128	PLD	Cypress	√						√			√								
		4080RP	Power MOSFET Driver	Space Electronics Inc.	√						√			√								
		7182RP	CCD Driver	Elantec	√						√			√								
		CGS74LCT2524	Clock Driver	National Semiconductor	√									√								
		LTC1157	Power MOSFET Driver	Linear Technology	√									√								
		MIC4423	Power MOSFET Driver	Micrel	√									√								
		SEi225RP	Fiber Optic Transceiver	Space Electronics Inc.	√						√			√								
		SN54LVTH16244	Buffer/Drivers	Texas Instruments	√									√								
		UT54ACS16245S	Digital Transceiver	UTMC	√						√			√								
		10502	NOR Gate	Motorola	√						√			√								
		54HC123RP	Monostable Multivibrator		√									√								
		74N185	D Flip Flop Multiplexed		√						√											
		MC74LCX08	AND Gate	Motorola	√									√								
		ASC4008DJ	512k x 8 SRAM	Austin Semiconductor	√						√											
		CY7C1049	512k x 8 SRAM	Cypress	√									√								
		HM65656	32k x 8 SRAM	Matra	√						√											
		HX6256	32k x 8 SRAM	Honeywell	√						√											
		MT5C2564	64k x 4 SRAM	Austin Semiconductor	√						√			√								
		MT5C2568	32k x 8 SRAM	Austin Semiconductor	√						√			√								
		WMS128K8	128k x 8 SRAM	White Semiconductor	√						√			√								
		WS512K8-XCX	512k x 8 SRAM	White Semiconductor	√						√											
			4M bit SRAM	EDI	√						√											
			1M bit SRAM	Hitachi	√						√			√								
			4M bit SRAM	Hitachi	√						√			√								
			4M bit SRAM	Space Electronics Inc.	√						√			√								
		KM44S16030CT-GL	16M x 4 SDRAM	Samsung	√						√			√								
		KM44S32030T-GL	32M x 4 SDRAM	Samsung	√						√			√								
		MT48LC1M16A1TG	1M x 16 SDRAM	Samsung	√						√			√								
		28F320	4M x 8 Flash Memory	Intel	√									√								
		28F640	8M x 8 Flash Memory	Intel	√									√								
		AM29LV800	1M x 8 Flash Memory	Advanced Micro Devices	√						√			√								
		KM29U128	16M x 8 Flash Memory	Samsung	√						√			√								
		KM29U128T	16M x 8 Flash Memory	Samsung	√						√			√								
		µPD4217800	2M x 8 DRAM	Nippon Electric Corporation	√									√								
		µPD4264800	2M x 8 DRAM	Nippon Electric Corporation	√									√								
		MSM514400	4M x 1 DRAM	Oki Semiconductor	√						√			√								
			16M bit DRAM	Nippon Electric Corporation	√						√			√								
			64M bit DRAM	Nippon Electric Corporation	√						√			√								
			64M bit DRAM	Nippon Electric Corporation	√						√			√								
			16M bit DRAM	Toshiba	√						√			√								
		HX6656	32k x 8 PROM	Honeywell	√						√											

		R29793	8k x 8 PROM	Fairchild Semiconductor	√						√			√								
		XQ1701LCC44	1M bit PROM	Xilinx	√						√			√								
		28LV010	128k x 8 EEPROM	Atmel	√						√			√								
		AT17C256	FPGA	Atmel	√									√								
		TC5856FT/DC	32M x 8 EEPROM	Toshiba	√						√			√								
		MC68302	Microprocessor	Motorola	√						√			√								
		PPC603	Microprocessor	Motorola	√						√											
		RAD750	Microprocessor	BAE Systems	√						√											
		XC68302	Microprocessor	Motorola	√									√								
		Pentium MMX	Microprocessor	Intel	√						√			√								
		Pentium II	Microprocessor	Intel	√						√			√								
		AD783SQ	Sample and Hold	Analog Devices	√						√			√								
		TL7702B	Power Supply Supervisor	Texas Instruments	√						√			√								
		TL7705	Power Supply Supervisor	Texas Instruments	√							√		√								
		TL7705B	Power Supply Supervisor	Texas Instruments	√							√		√								
		TL7770-5	Power Supply Supervisor	Texas Instruments	√							√		√								
		PIC16C505	Microprocessor	Motorola	√						√		√									
		DS1670E	Realtime Clock	Dallas Semicinductor	√									√								
		AD8011	Operational Amplifier	Analog Devices	√									√								
		AMP01	Instrumentation Amplifier	Analog Devices	√							√		√								
		AMP01NBC	Instrumentation Amplifier	Analog Devices	√									√								
		CLC449	Operational Amplifier	National Semiconductor	√									√								
		CLC502	Operational Amplifier	National Semiconductor	√							√										
		LMC6081	Operational Amplifier	National Semiconductor	√							√		√								
		LT27	Operational Amplifier	Linear Technology	√							√										
		MAX494	Operational Amplifier	Maxim	√							√										
		OP27	Operational Amplifier	Analog Devices	√							√										
		OP77NBC	Operational Amplifier	Analog Devices	√							√		√								
		PA07	Power Operational Amplifier	Apex	√									√								
		RH27	Operational Amplifier	Linear Technology	√							√										
		OLH249	Optocoupler	Isolink	√							√										
		OLH5601	Optocoupler	Isolink	√							√										
		DS1803	Digital Potentiometer	Dallas Semicinductor	√									√								
		DS1803Z-010	Digital Potentiometer	Dallas Semicinductor	√						√			√								
		LT1153	Digital Circuit Breaker	Linear Technology	√						√			√								
		A250	Charge Sensitive Preamplifier	Amptek	√									√								
		AD536	RMS-DC Converter	Analog Devices	√									√								
		Test Structure	Fab1-A	Space Electronics Inc.	√						√			√								
		Test Structure	Fab2-A	Space Electronics Inc.	√									√								
		HS1664RH	Pulse Width Modulator Controller	Harris Semiconductor	√						√			√								
		LMX2315	Phase Locked Loop	National Semiconductor	√						√			√								
		MAS0670	MMIC Amplifier	Hewlett Packard	√									√								
		MC74HC4538A	Multivibrator	Motorola	√									√								
		NYTEK8002	Delay Line	NYTek	√									√								
		PE3282A	Phase Locked Loop	Peregrine Semiconductor	√							√		√								
		SHM12RP	Sample and Hold	Space Electronics Inc.	√									√								
		SP8855	Phase Locked Loop	Mitsubishi	√						√			√								
		SP8858	Phase Locked Loop	Mitsubishi	√						√			√								
		AD2S80	Resolver to Digital Converter	Analog Devices	√						√			√								
		RDC19220	Resolver to Digital Converter	Data Devices Corporation	√						√			√								
		AD790	Voltage Comparator	Analog Devices	√									√								
		HS139	Voltage Comparator	Harris Semiconductor	√							√										
		HS139RH	Voltage Comparator	Harris Semiconductor	√									√								
		LM111	Voltage Comparator	National Semiconductor	√						√	√										
		LM119	Voltage Comparator	National Semiconductor	√																	
		LM139	Voltage Comparator	National Semiconductor	√						√			√								
		LP365	Voltage Comparator	National Semiconductor	√																	
		MAX962	Voltage Comparator	National Semiconductor	√									√								
		PM139	Voltage Comparator	National Semiconductor	√						√											
		RH1009	Shunt Regulator	Linear Technology	√						√			√								
		CA91C142-33IBZ1	ASIC	Tundra	√						√											
		SPT7760	8 bit ADC	Signal Processing Tech	√						√											
		AD978	16 bit ADC	Analog Devices	√						√											
		AM7992BDCB	Ethernet Line Interface	Intel	√						√											
		VAC068AGMB	VME Bus Interface	Cypress	√						√											
		MHF2805S	DC-DC Converter	Interpoint	√						√							√				
		MHF2815D	DC-DC Converter	Interpoint	√						√							√				
		RH21020	Digital Signal Processor	Lockheed Martin	√						√											
		TSC21202F	Digital Signal Processor	Matra	√						√											
		A1280A	FPGA	Actel	√						√											
		A54SX32-2PQ208	FPGA	Actel	√						√											
		AM79C98PC/B	Ethenet Transceiver	Intel	√						√											
		IDT74FCT16244TPA	Line Driver	IDT	√						√											
		IDT74FCT16245TPA	Transceiver	IDT	√						√											
		MAX232ESE	RS232 Driver	Maxim	√						√											
		SN74ALS642ADW	Transceiver	Texas Instruments	√						√											
		SN74LVTH166245	Transceiver	Texas Instruments	√						√											
		SN74ABT125PW	Bus Buffer	Texas Instruments	√						√											
		SN74ABT126PW	Bus Buffer	Texas Instruments	√						√											
		MCM6246	512k x 8 SRAM	Austin Semiconductor	√						√											
		MCM69R737AZP7	128k x 36 SRAM	Austin Semiconductor	√						√											
			1 Mbit SRAM	Hitachi	√						√											
			4 Mbit SRAM	Hitachi	√						√											
		KM44S16030CTGL		Samsung	√						√											
		KM44S32030TGL		Samsung	√						√											
		E28F016SA70	1k x 16 Flash Memory	Intel	√						√											
		KM29U128IT	16M x8 Flash Memory	Samsung	√						√											
		KM48V8100CSL6	8m x 8 DRAM	Samsung	√						√											
		NM93C46AM8	1k Serial Flash	National Semiconductor	√						√											
		WED3C750A8M	Microprocessor	Motorola	√						√											
		MPC750ARX266TH	Microprocessor	Motorola	√						√											
		PC750	Microprocessor	Motorola	√						√											
		MAX705ESA	Circuit Supervisor	Maxim	√						√											
		MAX797ESE	Switchmode Voltage Regulator	Maxim	√						√											
		MPC106ARXX66TG	PCI Bridge	Motorola	√						√											
		MPC980FA	Clock Driver	Motorola	√						√											
		QCC570-64.000MHz	Oscillator	Motorola	√						√											
		AMD7990DCB/70S	Ethernet Controller	Advanced Micro Devices	√						√											
		SB82558BS	Ethernet Controller	Intel	√						√											
		SYM53C825	SCSI Controller	SYMBIOS Logic	√						√											
		66088	Optocoupler	Micropac	√						√											
		66123	Optocoupler	Micropac	√						√											
		4N48	Optocoupler	Optek	√						√								√			
		4N49	Optocoupler	Texas Instruments	√						√											
		6N134	Optocoupler	Hewlett Packard	√						√											
		6N134	Optocoupler	Micropac	√						√											
		HCPL6651	Optocoupler	Hewlett Packard	√						√											
		OLH5601	Optocoupler	Isolink	√						√											
		LXT914PE	Optocoupler	10 BaseT Hub	√						√											
		66099	Optocoupler	Micropac	√													√				
		3C91	Optocoupler	Motorola	√													√				
		6N140	LED	Hewlett Packard	√													√				
		HFE4080	VCSEL	Hyundia	√													√				
		OD130	LED	Optek	√													√				
		OD233	LED	Optek	√													√				
		OD800	LED	Optodiode	√													√				
		OLH249	Optocoupler	Isolink	√													√				
		OP233	LED	Optek	√													√				
		OPF320	LED	Optek	√													√				
		LM111	Voltage Comparator	National Semiconductor	√													√				
		AD780	Voltage Reference	Analog Devices	√													√				
		LTC1021CNN-10	Voltage Reference	Linear Technology	√													√				
		LT1021CCN8-5	Voltage Reference	Linear Technology	√													√				
		XC4010E-4	FPGA	Xilinx	√						√											
		XC4010XL-4	FPGA	Xilinx	√						√											
		HM628512ALP-7	512k x 8 SRAM	Hitachi	√						√											
		HM628512BLFP	512k x 8 SRAM	Hitachi	√						√											
		HM628512BLP	512k x 8 SRAM	Hitachi	√						√			√								
		HM65656	32k x 8 SRAM	Atmel	√						√											
		KM681000BLP-7P	512k x 8 SRAM	Samsung	√						√											
		KM684000BLP-7L	512k x 8 SRAM	Samsung	√						√											
		KM684000LG-5L	512k x 8 SRAM	Samsung	√						√											
		M5M5408AFP-77LL	512k x 8 SRAM	Mitsubishi	√						√											
		M5M5408FP-55L	512k x 8 SRAM	Mitsubishi	√						√											
		M65608	128k x 8 SRAM	Atmel	√						√											
		MMC965608V45	128k x 8 SRAM	Matra	√						√											
		TC55400AF70L	512k x 8 SRAM	Toshiba	√						√											
		HCPL5631		Hewlett Packard	√														√			
		OD880WJ	LED	Optek	√														√			
		P2824		Hamamatsu	√														√			
		SDL5601V1	LED		√																	
18, pp. 127-133	R. Pease	LM124	Operational Amplifier	National Semiconductor	√		√	√														
		LM124	Operational Amplifier	Texas Instruments	√		√	√														
		LM158	Operational Amplifier	National Semiconductor	√		√	√														
		PM156	Operational Amplifier	Analog Devices	√		√	√														
		OP15	Operational Amplifier	Analog Devices	√		√	√														
		LM101A	Operational Amplifier	National Semiconductor	√		√	√														
		OP249	Operational Amplifier	Analog Devices	√		√	√														
		OP470	Operational Amplifier	Analog Devices	√		√	√														
		OP400	Operational Amplifier	Analog Devices	√		√	√														
		OP42	Operational Amplifier	Analog Devices	√		√	√														
		LM108	Operational Amplifier	Advanced Micro Devices	√		√	√														
		MAX473	Operational Amplifier	Maxim	√		√	√														
		LM139	Voltage Comparator	National Semiconductor	√		√	√														
		HS139RH	Voltage Comparator	Harris Semiconductor	√		√	√														
		LM139	Voltage Comparator	Texas Instruments	√		√	√														
		LM339	Voltage Comparator	National Semiconductor	√		√	√														
		LM111	Voltage Comparator	National Semiconductor	√		√	√														
		LM324	Voltage Comparator	National Semiconductor	√		√	√														
		LM224	Operational Amplifier	Signetics	√		√	√														
		LM117	Volatage Regulator	National Semiconductor	√		√	√														
		LM311	Voltage Comparator	National Semiconductor	√		√	√														
		REF02	Voltage Reference	Linear Technology	√		√	√														
		MC29372	Low Dropout Voltage Regulator	Micrel	√		√	√														
		LP2953	Low Dropout Voltage Regulator	National Semiconductor	√		√	√														
		LT1175	Low Dropout Voltage Regulator	Linear Technology	√		√	√														
		LT1528	Low Dropout Voltage Regulator	Linear Technology	√		√	√														
		LT1580	Low Dropout Voltage Regulator	Linear Technology	√		√	√														
		ADP3306	Low Dropout Voltage Regulator	Analog Devices	√		√	√														
		LT1763	Low Dropout Voltage Regulator	Linear Technology	√		√	√														
		LT1185	Low Dropout Voltage Regulator	Linear Technology	√		√	√														
		AD590	Temperature Sensor	Analog Devices	√		√	√														
		2N2222A	NPN Transistor	Motorola	√		√	√														
		2N2907A	PNPTransistor	Motorola	√		√	√														
		2N3019	NPN Transistor	Motorola	√		√	√														
		2N3501	NPN Transistor	Motorola	√		√	√														
19, pp. 134-141	M. Savage	AHE2815	DC-DC Converter	Advanced Analog	√							√										
		AHF2812	DC-DC Converter	Advanced Analog	√							√										
		ASA2805	DC-DC Converter	Advanced Analog	√							√										
		ATW2805	DC-DC Converter	Advanced Analog	√							√										
		AD536	RMS-DC Converter	Advanced Analog	√							√										
		7804	DC-DC Converter	Advanced Analog	√							√										
		DAC8222	12 bit DAC	Analog Devices	√							√										
		MCH2805S	DC-DC Converter	Modular Devices Inc.	√							√										
		MFL2805S	DC-DC Converter	Interpoint	√							√										
		MFL2812S	DC-DC Converter	Interpoint	√							√										
		MFL2815D	DC-DC Converter	Interpoint	√							√										
		MFL2815S	DC-DC Converter	Interpoint	√							√										
		MTR2805SFF	DC-DC Converter	Interpoint	√							√										
		MX7847TQ	12 bit DAC	Maxim	√							√										
		A250	Charge Sensitive Preamplifier	Amptek	√							√										
		AD524	Instrumentation Amplifier	Analog Devices	√							√										
		AD8001	Operational Amplifier	Analog Devices	√							√										
		CLC449	Operational Amplifier	National Semicinductor	√							√										
		EL2243	Operational Amplifier	Elantec	√							√										
		HS3530RH	Operational Amplifier	Harris Semiconductor	√							√										
		LM108	Operational Amplifier	National Semicinductor	√							√										

		LM108	Operational Amplifier	Motorola	√							√										
		LM108A	Operational Amplifier	Linear Technology	√							√										
		LM108AH	Operational Amplifier	Precision Monolithics Inc.	√							√										
		LM124	Operational Amplifier	National Semiconductor	√							√										
		OP05	Operational Amplifier	Precision Monolithics Inc.	√							√										
		OP07AJ	Operational Amplifier	Precision Monolithics Inc.	√							√										
		OP15	Operational Amplifier	Precision Monolithics Inc.	√							√										
		OP400	Operational Amplifier	Precision Monolithics Inc.	√							√										
		OP42	Operational Amplifier	Analog Devices	√							√										
		PA07	Power Operational Amplifier	Apex	√							√										
		RH1056	Operational Amplifier	Linear Technology	√							√										
		RH108A	Operational Amplifier	Linear Technology	√							√										
		LM218H	Operational Amplifier	National Semiconductor	√							√										
		AD9696	Volatage Comparator	Analog Devices	√							√										
		HS139	Volatage Comparator	Harris Semiconductor	√							√										
		HS139RH	Volatage Comparator	Harris Semiconductor	√							√										
		ICL7662MTV-4	Volatage Comparator	Maxim	√							√										
		LM111	Volatage Comparator	National Semiconductor	√							√										
		LM111	Volatage Comparator	Motorola	√							√										
		LM111H	Volatage Comparator	National Semiconductor	√							√										
		LM119	Volatage Comparator	National Semiconductor	√							√										
		LM139	Volatage Comparator	National Semiconductor	√							√										
		LM139	Volatage Comparator	Precision Monolithics Inc.	√							√										
		LM140	Volatage Comparator	National Semiconductor	√							√										
		LP365	Volatage Comparator	National Semiconductor	√							√										
		PM139	Volatage Comparator	Analog Devices	√							√										
		REF-02	Voltage Reference	Analog Devices	√							√										
		AX3411	Transceiver	AFX	√							√										
		AX3453	Transceiver	AFX	√							√										
		CT1487	Transceiver	MED	√							√										
		CT2521	Transceiver	MED	√							√										
		63125	Transceiver	Data Devices Corporation	√							√										
		FC1553921	Transceiver	STC	√							√										
		M63147	Transceiver	UTM/MIR	√							√										
		NH1500	Transceiver	National Semiconductor	√							√										
		NH1529	Transceiver	National Semiconductor	√							√										
		UT63M124-BPC	Transceiver	UTMC	√							√										
		UT63M125	Transceiver	UTMC	√							√										
		UTMC63M125	Transceiver	UTMC	√							√										
		74TFC163245PV	Transceiver	IDT	√							√										
		100307	XOR Gate	National Semiconductor	√							√										
		100324	TTL to ECL Translator	National Semiconductor	√							√										
		100325	ECL to TTL Translator	National Semiconductor	√							√										
		100331	D Flip Flop	National Semiconductor	√							√										
		932665	8k x 8 PROM	National Semiconductor	√							√										
		26C31	Line Driver	National Semiconductor	√							√										
		26C32	Line Receiver	National Semiconductor	√							√										
		26LS31	Line Driver	National Semiconductor	√							√										
		26LS32	Line Receiver	National Semiconductor	√							√										
		54HCS244	Line Driver/Receiver	National Semiconductor	√							√										
		54LS05	Inverter	National Semiconductor	√							√										
		54LS14	Inverter	Signetics	√							√										
		88C20	Line Receiver	National Semiconductor	√							√										
		88C30	Line Driver	National Semiconductor	√							√										
		AD565A	12 bit ADC	Analog Devices	√							√										
		AD783SQ	Sample and Hold	Analog Devices	√							√										
		AM29LV800	Flash Memory	Advanced Micro Devices	√							√										
		DAC08AQ	8 bit DAC	Analog Devices	√							√										
		HI509	Analog Multiplexer	Harris Semiconductor	√							√										
		HS26C31	Line Driver	Harris Semiconductor	√							√										
		HS26C32	Line Receiver	Harris Semiconductor	√							√										
		HS5212	12 bit ADC	Harris Semiconductor	√							√										
		M3G2805D	DC-DC Converter	Magnitude-3	√							√										
		MC68000	Microprocessor	Motorola	√							√										
		MSA0670	MMIC Amplifier	Hewlett Packard	√							√										
		Q3216	PLL Frequency Synthesizer	Qualcomm	√							√										
		Q3236	PLL Frequency Synthesizer	Qualcomm	√							√										
		QS3384DM	Bus Switch	QSI	√							√										
		SG1549	Current Sense Latch	Silicon General	√							√										
		TC4428	Power MOSFET Driver	TCS	√							√										
		TSC4429	Power MOSFET Driver	Teledyne	√							√										
		UC1802	Pulse Width Modulator Controller	Unitrode	√							√										
		UC1806	Pulse Width Modulator Controller	Unitrode	√							√										
		UC1825A	Pulse Width Modulator Controller	Unitrode	√							√										
		UC1845A	Pulse Width Modulator Controller	Unitrode	√							√										
		UCC1802	Pulse Width Modulator Controller	Unitrode	√							√										
20, pp. 142-145	C. Marshall		Fiber Optic Link 12 Channels	Honeywell	√							√										
		HFBR-53D5	Gigabit Ethernet Transceiver	Hewlett-Packard	√							√										
		TTC-155M4	155 Mbps Transceiver	Lasermate	√							√										
		TTC-155M2	155 Mbps Transceiver	Lasermate	√							√										
21, pp. 146-150	X. Sun	Slik	Silicon Avalanche Photodiode	Perkin Elmer	√													√				
22, pp. 151-154	X. Mao	FWT70-40M	Dosimeter	Optichromic	√													√	√			
		FWT70-83M	Dosimeter	Optichromic	√													√	√			
		FWT60-1P	Dosimeter	Radiochromic	√													√	√			
		2423	Dosimeter	Far West Technology	√													√	√			
23, pp. 155-159	K. Miller	S-TIL25	Near UV/Visible Transmissive Glass	Ohara	√													√				
		S-FPL51	Near UV/Visible Transmissive Glass	Ohara	√													√				
		S-PHM52	Near UV/Visible Transmissive Glass	Ohara	√													√				
		BPH5	Near UV/Visible Transmissive Glass	Ohara	√													√				
		UG5	UV Pass Filter Glass	Schott	√													√				
		UG11	UV Pass Filter Glass	Schott	√													√				
		Epotek 305	UV Transmissive Optical Adhesive	Epoxy Technologies	√													√				
		DC 93-500	UV Transmissive Optical Adhesive	Epoxy Technologies	√													√				
24, pp. 160-166	J. Gillberg	FSGL033	Power MOSFET	Fairchild Semiconductor	√														√			
		FSGL035	Power MOSFET	Fairchild Semiconductor	√														√			
		FSPL033	Power MOSFET	Fairchild Semiconductor	√														√			
		FSL13A0	Power MOSFET	Fairchild Semiconductor	√														√			
		FSL9103	Power MOSFET	Fairchild Semiconductor	√														√			
		FSL923A0	Power MOSFET	Fairchild Semiconductor	√														√			
		2N7397	Power MOSFET	Fairchild Semiconductor	√														√			
		FSL33A0	Power MOSFET	Fairchild Semiconductor	√														√			
		FSL430	Power MOSFET	Fairchild Semiconductor	√														√			
		FRL9130	Power MOSFET	Fairchild Semiconductor	√														√			
		FRL234	Power MOSFET	Fairchild Semiconductor	√														√			
25, pp. 167-171	J. Krieg	LM111	Voltage Comparator	Texas Instruments	√			√	√													
		LM111	Voltage Comparator	On Semi	√			√	√													
		LM111	Voltage Comparator	Phillips	√			√	√													
		LM111	Voltage Comparator	STI	√			√	√													
		LM111	Voltage Comparator	National Semiconductor	√			√	√													
26, pp. 172-176	R. Reed	Test Structure	Prescaler, 5HP SiGeHBTBiCMOS	IBM	√							√										
27, pp. 177-181	B. Hamilton	DS92LV1021	LVDS Serializer	National Semiconductor	√		√															
		DS92LV1212	LVDS Deserializer	National Semiconductor	√		√															
28, pp. 182-189	R. Koga	KM44S64230A	256M Bit SRAM	Samsung	√							√		√	√							
		0325404CT3A	256M Bit SRAM	IBM	√							√		√	√							
		HM5225405B	256M Bit SRAM	Hitachi	√							√			√							
		KM44S32030B	128M Bit SRAM	Samsung	√							√			√							
		KM44V16004B	64M Bit SRAM	Samsung	√							√										

Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.

REDW2000

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Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose				Single Event Effects							Displacement Damage		Facilities	Standard	Environment
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			
1, pp. 1-5	E. Blackmore		TRIUMF PIF proton beam properties																			
2, pp. 6-10	J. Gorelick	MMBT2222	Bipolar Transistor	General Semiconductor	√		√															
		MMBT2907	Bipolar Transistor	General Semiconductor	√		√															
		BC846B	Bipolar Transistor	General Semiconductor	√		√															
		BC856B	Bipolar Transistor	General Semiconductor	√		√															
		IRL2910	Power MOSFET	International Rectifier	√		√															
		LT1528	Voltage Regulator	Linear Technology	√		√	√														
		UC1836	Pulse Width Modulator Controller	Unitrode	√		√															
		58C1001	EEPROM	Hitachi	√		√															
		74LVC138	Decoder	Philips	√		√															
		74LVC138	Decoder	Fairchild	√		√															
		74LVC373	Latch	Philips	√		√															
		74LVC373	Latch	Fairchild	√		√															
3, pp. 11-15	P. McDonald	BUP307	Insulated Gate Bipolar Transistor	Infineon	√										√	√						
		OM6579SC	Insulated Gate Bipolar Transistor	Omnirel	√										√	√						
			Insulated Gate Bipolar Transistor	Semikron	√										√	√						
4, pp. 16-20	J. Benedetto		SRAM		√		√															
5, pp. 21-25	D. Hogue		Rad-Hard CMOS Cell Library		√		√															
6, pp. 26-31	G. Tomasch	ADS-937MM	16 bit ADC	Datel	√		√															
		LTC1419AISW	14 bit ADC	Linear Technology	√		√															
		AD9243AS	14 bit ADC	Analog Devices	√		√															
7, pp. 32-38	D. Hiemstra	OPA111AM	Operational Amplifier	Burr Browm	√		√															
		OPA627BM	Operational Amplifier	Burr Browm	√		√															
		OPA643P	Operational Amplifier	Burr Browm	√		√															
		CLC430AJP	Operational Amplifier	Comlinear	√		√															
		CLC425AJP	Operational Amplifier	Comlinear	√		√															
8, pp. 39-44	D. Hiemstra	Pentium MMX	Microprocessor	Intel	√				√		√		√									
		Celeron	Microprocessor	Intel	√				√		√		√									
9, pp. 45-52	R. Koga	KM44S64230A	256M bit SDRAM	Samsung	√						√		√	√								
		0325404CT3A	256M bit SDRAM	IBM	√						√		√	√								
		HM5225405B	256M bit SDRAM	Hitachi	√						√		√	√								
		KM44S32030B	128M bit SDRAM	Samsung	√						√		√	√								
		KM44V16004B	64M bit SDRAM	Samsung	√						√		√									
10, pp. 53-60	R. Koga	HS139RH	Voltage Comparator	Harris	√							√										
		LM139	Voltage Comparator	National Semiconductor	√							√										
11, pp. 61-63	L. Scheick	WMS128K8	128k x 8 SRAM	White	√						√			√								
		MT5C2564	64k x 4 SRAM	Austin	√						√			√								
		MT5C2568	32k x 8 SRAM	Austin	√						√			√								
12, pp. 64-67	D. Krawzsenek	28LV0100	1M bit EEPROM		√		√				√			√								
13, pp. 68-73	E. Vergnault	CS5016	16 bit ADC	Crystal Semiconductor	√									√								
		MAX195	16 bit ADC	Maxim	√		√				√			√								
		AD976	16 bit ADC	Analog Devices	√		√				√											
		AD7945	12 bit DAC	Analog Devices	√		√							√								
		MX7545	12 bit DAC	Maxim	√		√				√			√								
		AD790	Voltage Comparator	Analog Devices	√		√				√			√								
		AD8011	Operational Amplifier	Analog Devices	√		√															
		ADG411	Analog Switch	Analog Devices	√		√															
14, pp. 74-79	G. Hopkinson	AD9223	12 bit ADC	Analog Devices	√		√				√			√								
		LTC1415	12 bit ADC	Linear Technology	√		√				√			√								
15, pp. 80-84	M. Van Uffelen		Ge Doped Single Mode Fiber	Corning	√																	
			Ge Doped Single Mode Fiber	Plasma Optical Fibers	√																	
16, pp. 85-88	S. Crain	MC68302	Microprocessor	Motorola	√	√								√								
		XC68302	Microprocessor		√	√								√								
17, pp. 89-95	D. Falguere	HM65756	32k x 8 SRAM	Hitachi	√	√					√											
		MT5C1008	128k x 8 SRAM	Mitsubishi	√	√					√											
		HM68128	128k x 8 SRAM	Hitachi	√	√					√											
		SMJ416400	4M x 4 DRAM	Texsas Instruments	√	√					√											
		LUNA-E	4M x 4 DRAM	IBM	√	√					√											
			64k x1 SRAM	Russia	√	√					√											
		50G6269	8M x 4 DRAM	IBM	√	√					√											
		HM628512	512k x8 SRAM	Hitachi	√	√					√											
		M5M5408	512k x8 SRAM	Mitsubishi	√	√					√											
		KM684000	512k x8 SRAM	Samsung	√	√					√											
		EDI441024	1M x 4 DRAM	EDI	√	√					√											
		28C256	EEPROM	Xilinx		√					√											
		AT28C010	EEPROM	Atmel		√					√											
		MC68020	Microprocessor	Motorola		√					√											
		TSX68T020R16		Thomson		√					√											
18, pp. 96-99	D. Roth	KM29U128T	128M bit Flash Memory	Samsung	√		√				√			√								
		TC58256FT/DC	256M bit Flash Memory	Toshiba	√		√				√			√								
19, pp. 100-105	S. McClure	LP2953	Low Dropout Voltage Regulator	National Semiconductor	√		√	√														
		LT1528	Low Dropout Voltage Regulator	Linear Technology	√		√	√														
		AD3306	Low Dropout Voltage Regulator	Analog Devices	√		√	√														

		LT1763	Low Dropout Voltage Regulator	Linear Technology	√		√	√														
		LT1175	Low Dropout Voltage Regulator	Linear Technology	√		√	√														
		LT1185	Low Dropout Voltage Regulator	Linear Technology	√		√	√														
20, pp. 106-122	M. O'Bryan	TL7702B	Power Supervisor	Texas Instruments	√						√	√		√								
		TL7705B	Power Supervisor	Texas Instruments	√						√	√		√								
		TL7770-5	Power Supervisor	Texas Instruments	√							√		√								
		TLC7705	Power Supervisor	Texas Instruments	√							√		√								
		MX7225UQ	DAC08	Texsas Instruments	√									√								
		AD571S	10 Bit ADC	Analog Devices	√									√								
		LTC1419	14 bit ADC	Linear Technology	√									√								
		DAC08	8 bit DAC	Analog Devices	√							√		√								
		R29793	PROM	Fairchild	√							√		√								
		RH21020	Digital Signal Processor	LMFS	√							√										
		TSC21020F	Digital Signal Processor	Temic	√							√										
		10502	ECL NOR Gate	Motorola	√							√		√								
		MC74LCX08	And Gate	Motorola	√									√								
		HFBR-53D5	Fiber Optic Transceiver	Hewlett Packard	√							√										
		TTC-155M4	Fiber Optic Transceiver	Lasermate	√							√										
		TTC-155M2	Fiber Optic Transceiver	Lasermate	√							√										
		CLC449	Operational Amplifier	National Semiconductor	√							√		√								
		PA07	Power Operational Amplifier	APEX	√							√		√								
		LMC6081	Operational Amplifier	National Semiconductor	√									√								
		HS139	Voltage Comparator	Harris	√							√		√								
		LM139	Voltage Comparator	National Semiconductor	√							√		√								
		MAX962	Voltage Comparator	Maxim	√									√								
		AD783SQ	Sample and Hold	Analog Devices	√							√		√								
		A250	Charge Sensitive Amplifier	Aptek	√							√		√								
		MSA0670	MMIC Amplifier	Hewlett Packard	√							√		√								
		OLH5601	Optocoupler	Isolink	√							√										
		6N134	Optocoupler	Micropac	√							√										
		DS1670E	System Controller	Dallas Semiconductor	√								√									
		SN54LVTH16244A	Buffer/Drivers	Texas Instruments	√								√									
		CGS74LCT2524	Clock Driver	National Semiconductor	√								√									
		MIC4423	MOSFET driver	Micrel	√							√	√									
		MC74HC4538A	Multivibrator	Motorola	√								√									
		DS1803	Digital Potentiometer	Dallas Semiconductor	√						√		√									
		LM111	Voltage Comparator	National Semiconductor	√														√			
		OLH249	Optocoupler	Isolink	√														√			
		66099	Optocoupler	Micropac	√														√			
		OD800	LED	Optodiode	√														√			
		HFE-4080	VCSEL	Honeywell	√														√			
		MX913	Voltage Comparator	Maxim	√			√														
		CMP01	Voltage Comparator	Analog Devices	√		√															
		PM139	Voltage Comparator	Analog Devices	√		√															
		A1280A	FPGA	Actel	√		√															
		LMC6464	Operational Amplifier	National Semiconductor	√		√															
		CLC502	Operational Amplifier	National Semiconductor	√			√														
		AD783SQ	Sample and Hold	Analog Devices	√			√														
		AD620	Operational Amplifier	Analog Devices	√			√														
		AD845	Operational Amplifier	Analog Devices	√			√														
		OP-07	Operational Amplifier	Analog Devices	√			√														
		AMP01	Instrumentation Amplifier	Analog Devices	√			√														
		OP467	Operational Amplifier	Analog Devices	√			√														
		OP400	Operational Amplifier	Analog Devices	√			√														
		OP270	Operational Amplifier	Analog Devices	√			√														
		OP27	Operational Amplifier	Analog Devices	√			√														
		OP15	Operational Amplifier	Analog Devices	√			√														
		AD585	Sample and Hold	Analog Devices	√			√														
		AD524	Instrumentation Amplifier	Analog Devices	√			√														
		LF155A	Operational Amplifier	Linear Technology	√			√														
		LT1010	Power Buffer	Linear Technology	√			√														
		LF198	Sample and Hold	Linear Technology	√			√														
		LF147	Operational Amplifier	Linear Technology	√			√														
		INA117SM	Instrumentation Amplifier	Burr Browm	√			√														
		PA07M	Power Operational Amplifier	APEX	√			√														
		A250	Charge Sensitive Amplifier	Amptek	√			√														
		MAX494	Operational Amplifier	Maxim	√			√														
		OM11725SMX	Operational Amplifier	Omnirel	√			√														
		AD7821	8 bit ADC	Analog Devices	√		√															
		AD7885	16 bit ADC	Analog Devices	√		√															
		AD571	10 Bit ADC	Analog Devices	√		√															
		AD976	16 bit ADC	Analog Devices	√		√															
		DAC08	8 bit DAC	Analog Devices	√		√															
		AD7535	14 bit DAC	Analog Devices	√		√															
		AD7545	12 bit DAC	Analog Devices	√		√															
		AD8222	12 bit DAC	Analog Devices	√		√															
		MX7225	8 bit DAC	Maxim	√		√															
		MX536	RMS to DC Converter	Maxim	√		√															
		MN5295	16 bit DAC	Micronetworks	√		√															
		PIC7527	Switching Regulator	Linfinity	√			√														
		LM117K	Voltage Regulator	National Semiconductor	√			√														
		LM117H	Voltage Regulator	National Semiconductor	√			√														
		LM117HVK	Voltage Regulator	National Semiconductor	√			√														
		LM117HVH	Voltage Regulator	National Semiconductor	√			√														
		OM3914	Voltage Regulator	Omnirel	√			√														
		OM1850STM3	Voltage Regulator	Omnirel	√			√														
		AD588	Voltage Reference	Analog Devices	√			√														
		AD780	Voltage Reference	Analog Devices	√			√														
		KM48C800AS-6U	8M x 8 DRAM	Samsung	√		√															
		KM684002AJ-17	512k x8 SRAM	Samsung	√		√															
		28C256	256k bit EEPROM	SEEQ/ATMEL	√		√															
		R29773	2K x 8 PROM	Fairchild/Rayrtheon	√		√															
		DG412	Analog Switch	Maxim	√		√															
		DG403	Analog Switch	Maxim	√		√															
		HI300	Analog Switch	Harris	√		√															
		ATR2815TF	DC-DC Converter	Lambda/Advanced Analog	√		√															
		MTR2815	DC-DC Converter	Interpoint	√		√															
		MTR2805	DC-DC Converter	Interpoint	√		√															
		SG1846	Pulse Width Modulator Controller	Linfinity	√		√															
		54ABT245A	Transceiver	National Semiconductor	√		√															
		MIC4424	Power MOSFET Driver	Micrel	√		√															
		QT22AC10M	Crystal Oscillator	Q-Tech	√		√															
		DS7830	Differential Line Driver	National Semiconductor	√		√															
		54AC74	Flip-Flop	National Semiconductor	√		√															
		OM20P10	Power MOSFET	Omnirel	√		√															
		2N7225	Power MOSFET	Harris	√		√															
		2N5115	JFET	Solitron	√		√															
		2N4858	JFET	Motorola	√		√															
		MAX962ESA	Voltage Comparator	Maxim	√		√															
		MAX972ESA	Voltage Comparator	Maxim	√		√															
		LMC6081AIM	Operational Amplifier	National Semiconductor	√		√															
		LP2952IM	Voltage Regulator	National Semiconductor	√		√															
		LT1580 IR-2.5	Voltage Regulator	Linear Technology	√		√															
		AM29LV800B	Flash Memory	Advanced Micro Devices	√		√															
		MT48LC1M16A1TG	1M x 16 SDRAM	Micron	√		√															
		IRLR2905	Power MOSFET	International Rectifier	√		√															
		DS1670E	System Controller	Dallas Semiconductor	√		√															
		OR2T15A2S240DB	FPGA	Lucent Technology	√		√															
		CGS74LCT252M	Clock Driver	National Semiconductor	√		√															
		DS1803Z-010	Electronic Potentiometer	Dallas Semiconductor	√		√															
		LTC1153CS8	Electronic Circuit Breaker	Linear Technology	√		√															
		LTC1157CS8	Power MOSFET Driver	Linear Technology	√		√															
		MC74HC4538AD	Multivibrator	Motorola	√		√															
		MC74LCX08D	NAND Gate	Motorola	√		√															
		SN74LVT16244	Line Driver/Buffer	Texas Instruments	√		√															
		SY100EL16VZC	Differential Receiver	Synergy	√		√															
		SY100EL31ZC	D Flip-Flop	Synergy	√		√															
		SY10EL15ZC	Clock Distributor	Synergy	√		√															
21, pp. 123-146	K. LaBel	4N24	Optocoupler	Texas Instruments			√												√			
		4N49		Texas Instruments															√			
		4N49		Micopac			√					√							√			
		4N49		TRW															√			
		4N49		Optek															√			
		OLF400		Isolink															√			
		OMT1062		Isolink															√			
		66092		Micropac															√			
		66099		Micropac								√							√			
		66123		Micropac								√							√			
		4N48		Micropac															√			
		4N48		Optek								√							√			
		4N55		Hewlett Packard								√							√			
		4N55		Micropac															√			
		6N134		Hewlett Packard								√							√			
		6N134		Micropac								√							√			
		6N136		Micropac								√										
		6N140		Hewlett Packard								√							√			
		6N140		Micropac								√							√			
		6N140A		Hewlett Packard								√										
		DIH125	MOSFET Relay	Dionics															√			
		FB00KB4	MOSFET Relay	Teledyne															√			
		HCPL5231		Hewlett Packard															√			
		HCPL5430		Hewlett Packard															√			
		HCPL5431		Hewlett Packard															√			
		HCPL5530		Hewlett Packard															√			
		HCPL5531		Hewlett Packard															√			
		HCPL5630		Hewlett Packard															√			
		HCPL5701		Hewlett Packard															√			
		HCPL5730		Hewlett Packard															√			
		HCPL6651		Hewlett Packard															√			
		HCPL2201		Hewlett Packard								√							√			
		HCPL2430		Hewlett Packard								√							√			
		HCPL5401		Hewlett Packard								√										
		HCPL5631		Hewlett Packard								√										
		HCPL6651		Hewlett Packard								√										
		OLH149		Isolink								√							√			
		OLH249		Isolink			√					√							√	√		
		OLH304		Isolink															√			
		OLH349		Isolink															√			
		OLH400		Isolink															√			
		P2824		Hamamatsu								√							√	√		
		66088		Micropac															√			
		3C91C		Mitel															√			
		HSSR-7110	MOSFET Relay	Hewlett Packard															√			
		OLS700		Isolink															√			
		OLH1049		Optek															√			
		OLH1049.0002		Optek															√			
		OLH1049.OO3		Optek															√			
		4N35		Micropac								√							√			
		61082-300	Photodiode	Micropac								√							√			
		62017 GS3040-3	Light Emitting Diode	Micropac															√			
		OP224	Light Emitting Diode	Optek															√			
		OP604	Phototransistor	Optek								√							√			
		MC009		Micropac															√			
		OLI400		Isolink															√			
		QCPL-5729		Hewlett Packard															√			
		S4N49		Micropac																√		
		OLH5601		Isolink								√										
		QCPL-6637		Hewlett Packard								√										
22, pp. 147-152	P. Truscott	Geant 4	Space radiation shielding simulator																			√
23, pp. 153-157	K. Gill		Laser, InGaAs/InP MQW DCPBH	NEC																√		
24, pp. 158-162	K. Miller	CID22Q	Charge Injection Devices	CIDTEK	√		√															

Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.

					Data		Total Ionizing Dose			Single Event Effects							Displacement Damage		Facilities	Standard	Environment
Paper No., Page					Terrestrial	Flight	Co60	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			

No.	First Author	Part No.	Type	Manufacture				ELDRS														
1, pp. 1-14	M. O'Bryan		4M bit SRAM	Space Electronics Inc.	√						√											
		ASC4008DJ	4M bit SRAM	Austin	√						√											
		WS512K8-XCX	4M bit SRAM	White	√						√											
			4M bit SRAM	Electronic Deisgn Inc.	√						√											
		AM29LV800	Flash Memory	Advanced Micro Devices	√							√		√								
		HM65656	SRAM	Matra	√						√											
		DRAM Stack	DRAM	Irvine Sensor Corp/IBM	√						√											
		AT17C256	EEPROM	Atmel	√									√								
		LMRH4Kx9	4k x 9 FIFO	LMFS	√						√											
		A1280A	FPGA	Actel	√						√											
		A1020	FPGA	Actel	√						√											
		DL5256	FPGA	Dynachip	√						√											
		RH21020	Digital Signal Processor	LMFS	√						√											
		3C91	Optocoupler	Mitel	√													√				
		OLH5601	Optocoupler	Isolink	√						√											
		OLH249	Optocoupler	Isolink	√						√											
		4N48	Optocoupler	Optek	√													√				
		4N49	Optocoupler	Texsas Instruments	√													√				
		66088	Optocoupler	Micropac	√													√				
		6651	Optocoupler	Hewlett Packard	√						√											
		66123	Optocoupler	Micropac	√						√											
		M3G2805D	DC-DC Converter	Magnitude-3	√							√		√								
		MHF2805S	DC-DC Converter	Interpoint	√													√				
		MHF2815S	DC-DC Converter	Interpoint	√													√				
		MHF2815D	DC-DC Converter	Interpoint	√													√				
		MTR2805SF	DC-DC Converter	Interpoint	√							√		√								
		MTR2815SF	DC-DC Converter	Interpoint	√									√								
		AD1672	12 bit ADC	Analog Devices	√						√											
		MAX494	Operational Amplifier	Maxim	√									√								
		SPT7760	ADC	Signal Processing Technology	√						√											
		AD780	Voltage Reference	Analog Devices	√													√				
		CLC502	Operational Amplifier	Comlinear	√									√								
		LT1021CCN8-5	Voltage Reference	Linear Technology	√													√				
		LT1021CCN8-10	Voltage Reference	Linear Technology	√													√				
		LT1153	Digital Circuit Breaker	Linear Technology	√									√								
		ZT-6500	CPCI Single Board Computer	Ziatech	√						√			√								
		CPCI-100	Dual IP 3U Carrier	Greenspring	√						√											
		IP 1553	1553 Interface	Greenspring	√									√								
			3U IP Carrier	Alphi	√						√											
			3U IP Carrier	Alphi	√						√											
		CPCI-200	6U IP Carrier	Greenspring	√						√											
		CPCI-3603	CPCI Single Board Computer	Force	√						√											
			IP Optocoupler Driver	Greenspring	√						√							√				
			HV Unidig Driver	Greenspring	√						√											
			IP Serial Driver	Greenspring	√						√											
		SCC-04	IP Serial Driver	Actis	√						√											
			GPS Correlator/Front End	Plessey	√						√											
		CMA-401A	StrongARM Processor	Cogent Computers Inc.	√						√											
		ESN	ESN	Honeywell	√						√											
		AD536	RMS-DC Converter	Analog Devices	√							√		√								
		AMP01	Instrumentaion Amplifier	Analog Devices	√									√								
		8002	Delay Line	NYTEK	√									√								
		DAC8222	12 bit ADC	Analog Devices	√							√		√								
		HI-509	Analog Multiplexer	Harris	√							√		√								
		UT75ER	ASIC	UTMC	√						√			√								
		AMP01NBC	Instrumentaion Amplifier	Analog Devices	√							√		√								
		AD574	12 bit ADC	Analog Devices	√						√			√								
		OP77NBC	Operational Amplifier	Analog Devices	√							√		√								
		RH1009	Shunt Regulator Diode	Linear Technology	√							√		√								
		HSO-1840RH-Q	Analog Multiplexer	Harris	√						√			√								
		HX6256	32k x 8 SRAM	Honeywell	√						√			√								
		HX6656	ROM	Honeywell	√						√			√								
		MUX-28	Analog Multiplexer	Analog Devices	√						√			√								
		FRC913OR	Power MOSFET	Harris	√										√	√						
		FRC13OR	Power MOSFET	Harris	√										√	√						
2, pp. 15-23	B. Henson	KM44S16030CT-GL	64M bit SRAM	Samsung	√		√				√			√								
		KM44S32030T-GL	128M bit SRAM	Samsung	√		√				√			√								
3, pp. 24-29	D. MacQueen	XC4036XL	FPGA	Xilinx	√		√															
		XC4036XLA	FPGA	Xilinx	√		√															
4, pp. 30-34	S. Crain	320C50	Digital Signal Processor	Texsas Instruments	√		√				√		√	√								
5, pp. 35-40	S. Guertin	XQ1701L	PROM	Xilinx	√						√		√	√								
6, pp. 41-45	G. Lyons	PE9601	Phase Lock Loop	Peregrine	√		√															
7, pp. 46-52	L. Dayarantna	LMX2315	Frequency Synthesizer	National Semiconductor	√						√											
		PE3282A	Frequency Synthesizer	Peregrine	√						√											
		SP8858	Frequency Synthesizer	Mitel	√						√											
		SP8855	Frequency Synthesizer	Mitel	√						√											
8, pp. 53-59	P. Layton	SRP9140	FET		√		√															
		2N3700	Bipolar Transistor		√		√															
		AD7510RPD	Analog Switch		√		√															
		AD7510DI	Analog Switch		√		√															
		1280A	FPGA	Actel	√		√															
		54BCT244RP	Octal Buffer		√		√															
		SHM-12RP	Sample and Hold		√		√							√								
		7182RP	CCD Driver	Elantec	√		√				√			√								
		411RPDS	Analog Switch		√		√															
		54HC123RP	Multivibrator		√		√							√								
		Q3005N	MOSFET		√		√															
		CA3080A	Operational Amplifier		√		√															
		MMBT3904LT1	Bipolar Transistor		√		√															
		MMBTH10LT1	Bipolar Transistor		√		√															
		4080ARP	Full Bridge Driver		√		√							√								
		8408RP	8 bit DAC		√		√							√								
		AD9240	14 bit ADC	Analog Devices	√		√							√								
		SEI Fab1-A	Analog Process		√						√			√								
		SEI Fab2-A	Analog Process		√		√							√								
		74N185	D type Flip-Flop Multiplexed		√		√				√			√								
		225RP	Fiber Channel Transciever		√		√				√			√								
		28C010TRP	1M bit EEPROM		√		√							√								
		LF411	Operational Amplifier		√		√															
		1101	FET		√		√															
		1102	FET		√		√															
		1701	Operational Amplifier		√		√															
		LM137	Voltage Regulator		√		√															
		LM111	Voltage Comparator		√		√															
		UC1901	Isolated Feedback Generator		√		√															
		OP-27	Operational Amplifier		√		√															
		PM108A	Operational Amplifier		√		√															
		LM108A	Operational Amplifier		√		√															
		LM108AH	Operational Amplifier		√		√															
9, 60-81	J. Coss	1840RP		Space Electronics Inc.	√						√											
		Test Structure	CMOS Fab 1 ASIC	Space Electronics Inc.	√						√											
		AD570	8 bit ADC	Analog Devices	√						√			√								
		HI1276	8 bit ADC	Harris	√									√								
		MP7684	8 bit ADC	Exar	√						√			√								
		TMC1175C3V20	8 bit ADC	Raytheon	√									√								
		AD7893SQ	12 bit ADC	Analog Devices	√						√			√								
		CS5012	12 bit ADC	Crystal Semiconductor	√						√			√								
		AD9240	14 bit ADC	Analog Devices	√									√								
		AD9243	14 bit ADC	Analog Devices	√									√								
		ADS946-2	14 bit ADC	Analog Devices	√									√								
		7805LPRP	16 bit ADC	Space Electronics Inc.	√						√			√								
		7809LRP	16 bit ADC	Burr-Brown	√						√			√								
		AD676AD	16 bit ADC	Analog Devices	√						√			√								
		AD677	16 bit ADC	Analog Devices	√						√			√								
		AD7884AQ	16 bit ADC	Analog Devices	√						√			√								
		AD976	16 bit ADC	Analog Devices	√						√			√								
		AD9260	16 bit ADC	Analog Devices	√									√								
		ADS7809	16 bit ADC	Analog Devices	√						√			√								
		ADS937	16 bit ADC	Analog Devices	√									√								
		AD7714-3	24 bit ADC	Analog Devices	√									√								
		DAC8800	8 bit DAC	Analog Devices	√						√			√								
		MX7847TQ	12 bit DAC	Maxim	√									√								
		SP9380	18 bit DAC	Sipex	√						√			√								
		7804	DC-DC Converter	Advanced Analog	√						√											
		5690R-D15	DC-DC Converter	Modular Devices	√						√											
		AHF2812	DC-DC Converter	Advanced Analog	√						√											
		ASA2805S/CH	DC-DC Converter	Advanced Analog	√						√											
		ATW2805S	DC-DC Converter	Advanced Analog	√						√											
		ICL7662MTV-4	DC-DC Converter	Maxim	√						√			√								
		MCH2805S	DC-DC Converter	Interpoint	√						√											
		MDI2680	DC-DC Converter	Modular Devices	√						√											
		SMJ320C50GFAM50	Digital Signal Processor	Texsas Instruments	√						√			√								
		ADSP-21020KG-133	Digital Signal Processor	Analog Devices	√						√			√								
		ADSP-21020KG-120	Digital Signal Processor	Analog Devices	√						√			√								
		ADSP-21020KG-80	Digital Signal Processor	Analog Devices	√						√			√								
		SMJ320C30GB	Digital Signal Processor	Texsas Instruments	√						√			√								
		SMJ320C40HFM-40	Digital Signal Processor	Texsas Instruments	√						√			√								
		6704EV-50	4k x 9 FIFO	Temic	√						√			√								
		M6720EV-50	4k x 9 FIFO	Temic	√						√			√								
		10009L	FPGA	Gatefiled	√									√								
		3090A	FPGA	Xilinx	√						√			√								
		A1280XL(5.0V)	FPGA	Actel	√						√			√								
		A1280XL(3.3V)	FPGA	Actel	√						√											
		A14100A	FPGA	Actel	√						√											
		A1460A	FPGA	Actel	√						√											
		A32140DX	FPGA	Actel	√									√								
		A32140DX(3.3V)	FPGA	Actel	√						√			√								
		A32140DX(5.0V)	FPGA	Actel	√						√			√								
		A32200DX	FPGA	Actel	√									√								
		CLAy-31	FPGA	National Semiconductor	√						√			√								
		KJ911	FPGA	Lockheed Martin	√						√											
		MKJ911	FPGA	Matsushita	√						√											
		QYH580LPGA(3.3V)	FPGA	Yamaha	√						√			√								
		QYH580LPGA(5.0V)	FPGA	Yamaha	√						√			√								
		RH1280(5.0V)	FPGA	Actel	√						√			√								
		RH1280(3.3V)	FPGA	Actel	√						√											
		XC4036XL	FPGA	Xilinx	√						√			√								
		10050LPRP	PLA	Hitachi	√						√			√								
		22V10FRP	PLA	Hitachi	√						√			√								
		22V10RP	PLA	Hitachi	√						√			√								
		22V10RPFE	PLA	Space Electronics Inc.	√						√			√								
		HX2300	SOI Test Metal RJCMOS SOI14	Honeywell	√						√			√								
		IMP50E10	Analog FPGA	IMP Incorporated	√						√			√								
		54ABT245	Transceiver	National Semiconductor	√						√			√								
		54ABT245	Transceiver	Phillips	√						√			√								
		74LVQ244	Buffer	National Semiconductor	√									√								
		AM7968	TAXI Receiver	Advanced Micro Devices	√						√			√								
		AM7969	TAXI Transmitter	Advanced Micro Devices	√						√			√								
		AM79C98	Transceiver	Advanced Micro Devices	√						√			√								
		DP8392CV	Transceiver	National Semiconductor	√						√			√								
		LV244	Buffer	Phillips	√									√								
		LVC245	Bidirectional Buffer	Phillips	√									√								
		MIC4429AJB	Linear Driver	Micrel	√						√			√								
		SNJ54ABT245AJ	Buffer	Texsas Instruments	√						√			√								
		UT63M147BPC	1553 Transceiver	UTMC	√						√			√								
		CD4014	Shift Register	Harris	√						√			√								
		93419	512 bit SRAM	Fairchild	√						√			√								
		68128	128k x 8 SRAM	Hitachi	√									√								
		µPD4464D-20	2k x 8 SRAM	NEC	√									√								
		32C408	512k x 8 SRAM	Space Electronics Inc.	√						√			√								
		38510/19101XCR	64k bit SRAM	NEC	√						√			√								
		38510/92001XB	256k bit SRAM	Hitachi	√						√			√								
		5C1008FE-M	128k x 8 SRAM	Austin	√						√			√								
		AS5C4008CW-35E	512k x 8 SRAM	Motorola	√						√											
		ASC512K8	512k x 8 SRAM	Austin	√						√											
		CXK581000BP-10LL	128k x 8 SRAM	Sony	√						√			√								

ES4	4M x 4 SRAM	IBM	√						√													
HM628128BLP-7	128k x 8 SRAM	Hitachi	√						√													
HM628512ALP-7	512k x 8 SRAM	Hitachi	√						√													
HM65656	32k x 8 SRAM	Temic	√						√													
IS61C1024-20M	128k x 8 SRAM	ISS Incorporated	√						√			√										
KM864002AJ-17	512k x 8 SRAM	Samsung	√						√													
M65608	128k x 8 SRAM	Temic	√						√													
M65608E	128k x 8 SRAM	Temic	√						√													
M65964	64k bit SRAM (test structure)	Temic	√						√													
MCM6246WJ20	512k x 8 SRAM	Motorola	√						√													
TA786	16k bit SRAM (test structure)	Sandia National Laboratories	√						√													
28F016SA	2M x 8 Flash Memory	Intel	√						√			√										
KM29N16000	2M x 8 Flash Memory	Samsung	√						√			√										
KM29N32000	4M x 8 Flash Memory	Samsung	√						√													
0116400JIC-70	4M x 4 DRAM	IBM	√						√			√										
0116400JID	4M x 4 DRAM	IBM	√						√			√										
0117400BT1E-60	4M x 4 DRAM	IBM	√						√													
14C0164RP	4M x 4 DRAM	Hitachi	√						√			√										
D426S165G5	4M x 16 EDO DRAM	NEC	√						√													
HM51W16100B	4M x 4 DRAM	Hitachi	√						√													
KM44V4100AJ	4M x 4 DRAM	Samsung	√						√													
KM48V8104AS-6	8M x 8 EDO DRAM	Samsung	√						√													
MT4LC4M4D42	4M x 4 DRAM	Micron Technologies	√						√													
TC5165805AFT-50	4M x 4 DRAM	Toshiba	√						√													
TMS416400DJ-60	4M x 4 DRAM	Texsas Instruments	√						√			√										
28C010TE	128k x 8 EEPROM	Hitachi	√						√			√										
57C256F-35		Western Semiconductor	√						√			√										
AS58C1001SF-15E	1M bit EEPROM	Hitachi	√						√			√										
E28F016SB	1M bit Flash Memory	Intel	√						√			√										
MG80C186-12/B	Microprocessor	Intel	√						√			√										
MG80C286-12/883	Microprocessor	Harris	√						√			√										
6x86-PR166+GP	Microprocessor	Crystal Semiconductor	√						√			√										
80486DX2RP	Microprocessor	Intel	√						√			√										
80486DX4	Microprocessor	Advanced Micro Devices	√						√			√										
H30466A-21	Microprocessor	Space Electronics Inc.	√						√			√										
K5-PR166ABX	Microprocessor	Advanced Micro Devices	√						√			√										
MG80486DX2-66	Microprocessor	Intel	√						√			√										
R3000	Microprocessor	Synova	√						√			√										
MQ80386-25B	Microprocessor	Intel	√						√			√										
RH32	Microprocessor	Honeywell	√						√			√										
82C54	Timer	Intel	√						√			√										
D8255A-5	Programmable Peripheral Interface	Intel	√									√										
DP83932CVF	Network Interface Controller	National Semiconductor	√									√										
DP83950BVQB	Repeater Interface Controller	National Semiconductor	√									√										
DP83956AVLJ	Repeater Interface Controller	National Semiconductor	√									√										
M82C59	Interupt Controller	Harris	√									√										
MQ82380-25/B	Intergated Peripheral	Intel	√						√			√										
TL7705	Power Supervisor	Texsas Instruments	√						√			√										
TL7705-5	Power Supervisor	Texsas Instruments	√						√			√										
MG80387-20/B	Floating Point Unit	Intel	√						√			√										
LM108	Operational Amplifier	National Semiconductor	√						√			√										
OP42	Operational Amplifier	Analog Devices	√						√			√										
OP400	Operational Amplifier	Precision Monolithics Inc.	√						√			√										
4N49	Optocoupler	Hewlett Packard	√																			
6N140	Optocoupler	Hewlett Packard	√						√													
HCPL5203	Optocoupler	Hewlett Packard	√						√													
HCPL5631	Optocoupler	Hewlett Packard	√						√													
HCPL6651	Optocoupler	Hewlett Packard	√																			
37-97	Autocorrelator	Orbit Semiconductor	√						√													
AD630	Balanced Modulator	Analog Devices	√						√			√										
AD562	Voltage to Fequency Converter	Analog Devices	√						√			√										
FUGA15	Imager Driver	Cam Technology	√									√										
QS3384DM	Quickswitch	Quickswitch Inc.	√									√										
SG1549	Currewnt Sense Latch	Silicon General	√						√			√										
AD9696	Voltage Comparator	Analog Devices	√						√			√										
LM111	Voltage Comparator	National Semiconductor	√						√													
LM119	Voltage Comparator	National Semiconductor	√						√													
LM139	Voltage Comparator	National Semiconductor	√						√			√										
LM139	Voltage Comparator	Precision Monolithics Inc.	√						√													
LM136AH	Voltage Reference	National Semiconductor	√						√													
REF02	Voltage Reference	Analog Devices	√						√			√										
UT1553BRT1	1553 Remote Terminal	UTMC	√						√													
MHF2815d	DC-DC Converter	Advanced Analog	√						√													
2706T	Fiber Optic Link Transmitter	Force Incorporated	√						√													
2706R	Fiber Optic Link Receiver	Force Incorporated	√						√													
ATTDA204B	Fiber Optic Link Transmitter	AT&T	√						√													
ATTDA205B	Fiber Optic Link Receiver	AT&T	√						√													
M6720EV-50	4k x 9 FIFO	MTA	√						√													
A1280	FPGA	Actel	√						√													
A1280A	FPGA	Actel	√						√													
A14100A	FPGA	Actel	√						√													
A1460A	FPGA	Actel	√						√													
CLAy-31	FPGA	Actel	√						√			√										
MKJ911	FPGA	Matsushita	√						√													
RH1280	FPGA	Actel	√						√													
XC4010E-4	FPGA	Xilinx	√						√													
XC4010XL-4	FPGA	Xilinx	√						√													
IMP50E10	Analog FPGA	IMP Incorporated	√						√													
JT22V10-10	PLD	Cyrpess	√						√													
DR1773	1773 Bus transceiver	BOE	√						√													
54ALS05	Inverter	Texsas Instruments	√						√													
54ALS1035	NOR Gate	Texsas Instruments	√						√													
54LS03	8k x 16 Dual Port SRAM	Texsas Instruments	√						√													
70V25	512k x 8 SRAM	IDT	√						√													
AS5C4008CW-35E	128k x 8 SRAM	Motorola	√						√													
CXK1000AM-70LL	128k x 8 SRAM	Sony	√						√													
CXK581000BP-10LL	128k x 8 SRAM	Sony	√						√													
CXK58258P-35	32k x 8 SRAM	Sony	√						√													
CY7C167-35DC	16K x 1 SRAM	Cyrpess	√									√										
CY7C185-25DC	8k x 8 SRAM	Cyrpess	√						√													
CY7C185-35DC	8k x 8 SRAM	Cyrpess	√						√													
CY128-35DC	2k x 8 SRAM	Cyrpess	√						√													
CY128A-35DC	2k x 8 SRAM	Cyrpess	√						√													
D431000ACZ-85LL	128k x 8 SRAM	NEC	√						√													
D43256AC10LL	32k x 8 SRAM	NEC	√						√													
D4364C-20L	8k x 8 SRAM	NEC	√						√													
D4464C-15	8k x 8 SRAM	NEC	√									√										
D4464G-15L	8k x 8 SRAM	NEC	√									√										
EDH8832C10KMHR	32k x 8 SRAM	EDI Corporation	√						√													
EDH8832C100CL	32k x 8 SRAM	EDI Corporation	√						√													
EDH8832C-15JMHR	32k x 8 SRAM	EDI Corporation	√						√													
ED18806CB35QB	8k x 8 SRAM	EDI Corporation	√						√													
ED18810L150DB	8k x 8 SRAM	EDI Corporation	√									√										
ED188128C100CM	128k x 8 SRAM	EDI Corporation	√						√													
ED188130H45CM	128k x 8 SRAM	EDI Corporation	√						√													
HM1-6504-2	4k x 1 SRAM	Harris	√						√													
HM1-6504-5	4k x 1 SRAM	Harris	√						√													
HM1-6504-9	4k x 1 SRAM	Harris	√						√													
HM1-65162-2	4k x 1 SRAM	Harris	√						√													
HM1-6516-9	2k x 8 SRAM	Harris	√						√													
HM1-65262-2	16k x 8 SRAM	Matra	√						√													
HM1E-65664B-2	8k x 8 SRAM	Matra	√						√													
HM6116P-3	2k x 8 SRAM	Hitachi	√						√													
HM62256P-10	32k x 8 SRAM	Hitachi	√						√													
HM62256P-10	32k x 8 SRAM	Hitachi	√						√													
HM6264ALP-15	8k x 8 SRAM	Hitachi	√						√													
HM6264LP-15	8k x 8 SRAM	Hitachi	√						√													
HM618128BLP-7	128k x 8 SRAM	Hitachi	√						√													
HM628128L-10	128k x 8 SRAM	Hitachi	√						√													
HM628512ALP-7	512k x 8 SRAM	Hitachi	√						√													
HM628512P-7	128k x 8 SRAM	Hitachi	√						√													
HM65656	32k x 8 SRAM	Matra	√						√													
HM65656E	32k x 8 SRAM	Matra	√						√													
HM65687E	64k x 8 SRAM	Matra	√						√													
HM65697	256k x 8 SRAM	Matra	√						√													
HMCE65664B8	8k x 8 SRAM	Matra	√						√													
IDT712569BC	32k x 8 SRAM	IDT	√						√													
IDT71256OC	32k x 8 SRAM	IDT	√						√													
IDT7164	8k x 8 SRAM	IDT	√						√													
IMS1600S55ABF	64k x 1 SRAM	InMOS Corporation	√						√													
IS61C1024-20M	512k x 8 SRAM	ISS Incorporated	√						√													
KM681000LP-8	128k x 8 SRAM	Samsung	√						√													
KM6840000LP-5	128k x 1 SRAM	Samsung	√						√													
KM864002AJ-17	512k x 8 SRAM	Samsung	√						√													
M5M53568BP-15	32k x 8 SRAM	Mitsubishi	√						√													
MAS6116	2k x 8 SRAM	MMS	√						√													
MB81C81A-45	256k x 1 SRAM	Fujitus	√						√													
MB84256-10L	32k x 8 SRAM	Fujitus	√						√													
MB84256-15L	32k x 8 SRAM	Fujitus	√						√													
MB8464-15	8k x 8 SRAM	Fujitus	√						√													
MCM6246WJ20	512k x 8 SRAM	Motorola	√						√													
MMI-6504H11	4k x 1 SRAM	Matra	√						√													
MSM8128S-70	128k x 8 SRAM	Micropac	√						√													
MSM8128S-85	128k x 8 SRAM	Micropac	√						√													
MSM8128SLMB-45	128k x 8 SRAM	Micropac	√						√													
MT5C1008C-25	128k x 8 SRAM	Micron Technologies	√						√													
MT5C256S12D	32k x 8 SRAM	Micron Technologies	√						√													
MT5C2568S02A	32k x 8 SRAM	Micron Technologies	√						√													
P4C125735CC	256k x 1 SRAM	Performance Semiconductor	√						√													
QS8328015P	32k x 8 SRAM	Quickswitch Inc.	√									√										
SMJ61CD16LA-25	16K x 1 SRAM	Texsas Instruments	√									√										
TC55100BPL-70L	128k x 8 SRAM	Toshiba	√						√													
TC5516AP-2	2k x 8 SRAM	Toshiba	√						√													
TC55257P-10	32k x 8 SRAM	Toshiba	√						√													
TC5564PL-15	8k x 8 SRAM	Toshiba	√									√										
TC55B8128P-20	128k x 8 SRAM	Toshiba	√						√													
UM62256-10L	32k x 8 SRAM	UTMC	√						√													
AM29LV800B-120	1M x 8 Flash Memory	Advanced Micro Devices	√						√													
CAT28F010P-15OES	128k x 8 Flash Memory	CAT	√						√													
M28F101-150PIVP8	128k x 8 Flash Memory	SGS	√						√													
M28F256-15B1VP8A	32k x 8 Flash Memory	SGS	√						√													
M5M28F101P-12	128k x 8 Flash Memory	Mitsubishi	√						√													
P28F010-120	128k x 8 Flash Memory	Intel	√						√													
P28F512-120	64k x 1 Flash Memory	Intel	√						√													
TMS28F512-120C3NL	64k x 1 Flash Memory	Texsas Instruments	√						√													
µPD4216400-60	4M x 4 DRAM	NEC	√						√													
0116400J1C-70	4M x 4 DRAM	IBM	√						√													
0116400J1C-70	160 Mbit SRAM Stack	IBM	√						√													
0116400J1D	4M x 4 DRAM (5.0V)	IBM	√						√													
0116400J1D	4M x 4 DRAM (3.3V)	IBM	√						√													
011640PT1C-70	4M x 4 DRAM (3.3V)	IBM	√						√													
0117400BT1E-60	4M x 4 DRAM (3.3V)	IBM	√						√													
0117400BT1F-60	4M x 4 DRAM (3.3V)	IBM	√						√													
014400MJ1D	4M x 1 DRAM	IBM	√						√													
4216400-70	4M x 4 DRAM (5.0V)	NEC	√						√													
43G9240	4M x 4 DRAM (3.3V)	IBM	√						√													
4C4001JC-00E	4M x 1 DRAM	MCN	√						√													
63F9221N13226TC	4M x 4 DRAM	IBM	√						√													
8116100-60JT32	16M x 1 DRAM	Fujitus	√						√													
8813045PC	128k x 8 DRAM	Hitachi	√						√													
D421000C-10	1M x 1 DRAM	NEC	√						√													
D4216100V-70	16M x 1 DRAM	NEC	√						√													
D4216400G3-70	4M x 4 DRAM (3.3V)	NEC	√						√													
D424100V-80	4M x 1 DRAM	NEC	√						√													
D424256C-80	256k x 4 DRAM	NEC	√						√													
EDI44102C100ZC	4M x 1 DRAM	EDI Corporation	√						√													
HM5116100Z8	16M x 1 DRAM	Hitachi	√						√													

Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose				Single Event Effects							Displacement Damage		Facilities	Standard	Environment
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			
1, pp. 1-10	J. Barth	MT5C1008CW25	128k x 8 SRAM	Micron		√					√											
		88130L45PC	128k x 8 SRAM	EDI		√					√											
		ZQ04054628128	128k x 8 SRAM	Hitachi		√					√											
		MT5C2568CW-25	32k x 8 SRAM	Micron		√					√											
		8832C12C1	32k x 8 SRAM	EDI		√					√											
		71256L100DB	32k x 8 SRAM	IDT		√					√											
		2N6796	Power MOSFET	Harris		√									√							
		2N6796	Power MOSFET	International Rectifier		√									√							
		2N6798	Power MOSFET	Harris		√									√							
		2N6798	Power MOSFET	International Rectifier		√									√							
2, pp. 11-14	S. Leavy	RH32	Microprocessor	Honeywell	√						√											
		RH32	Floating Point Unit	Honeywell	√						√											
		RH32	Cache Memory	Honeywell	√						√											
3, pp. 15-38	J. Coss	IRHM7504	Power MOSFET	International Rectifier	√											√						
		IRFM054	Power MOSFET	International Rectifier	√										√							
		2N6660	Power MOSFET	Siliconix	√										√							
		VN88AF	Power MOSFET	Siliconix	√										√							
		IRF150	Power MOSFET	General Electric	√										√							
		FRK150	Power MOSFET	Harris Semiconductor	√											√						
		FRK150R	Power MOSFET	Harris Semiconductor	√											√						
		FRK160	Power MOSFET	Harris Semiconductor	√											√						
		FRK160D	Power MOSFET	Harris Semiconductor	√											√						
		FRL130D1	Power MOSFET	Harris Semiconductor	√											√						
		FRM140	Power MOSFET	Harris Semiconductor	√											√						
		FRM140D1	Power MOSFET	Harris Semiconductor	√											√						
		IRF150	Power MOSFET	International Rectifier	√										√							
		2N6756	Power MOSFET	Harris Semiconductor	√										√							
		FRM130	Power MOSFET	Harris Semiconductor	√										√							
		FRM140	Power MOSFET	Harris Semiconductor	√											√						
		IRF130	Power MOSFET	Harris Semiconductor	√										√							
		2N7664	Power MOSFET	Harris Semiconductor	√											√						
		FSL130	Power MOSFET	Harris Semiconductor	√										√							
		IRF140	Power MOSFET	International Rectifier	√											√						
		FSL110	Power MOSFET	Harris Semiconductor	√										√							
		FSL150R	Power MOSFET	Harris Semiconductor	√										√							
		2N6782	Power MOSFET	Harris Semiconductor	√										√							
		2N7261SH	Power MOSFET	International Rectifier	√										√							
		IRF110	Power MOSFET	International Rectifier	√											√						
		IRF120	Power MOSFET	International Rectifier	√										√							
		IRF130	Power MOSFET	International Rectifier	√										√							
		IRF140	Power MOSFET	International Rectifier	√										√							
		IRF150	Power MOSFET	International Rectifier	√										√							
		IRFF130	Power MOSFET	International Rectifier	√										√							
		IRH130	Power MOSFET	International Rectifier	√										√							
		IRH7150	Power MOSFET	International Rectifier	√										√	√						
		IRHF130	Power MOSFET	International Rectifier	√										√							
		IRFG6110	Power MOSFET	International Rectifier	√										√							
		IRHF7110	Power MOSFET	International Rectifier	√										√	√						
		IRHF7130	Power MOSFET	International Rectifier	√											√						
		IRHM7130	Power MOSFET	International Rectifier	√											√						
		IRHF130	Power MOSFET	International Rectifier	√											√						
		IRFF110	Power MOSFET	International Rectifier	√											√						
		2N6782	Power MOSFET	International Rectifier	√										√	√						
		IRH150	Power MOSFET	International Rectifier	√										√							
		IRFF120	Power MOSFET	International Rectifier	√										√							
		IRH150	Power MOSFET	International Rectifier	√										√							
		ECG2392	Power MOSFET	Phillips	√										√	√						
		RFM12N18	Power MOSFET	Radio Corporation of America	√										√							
		20M45BNFR	Power MOSFET	Advanced Power Technology	√										√							
		IRF250	Power MOSFET	General Electric	√																	
		FRK250	Power MOSFET	Harris Semiconductor	√											√						
		FRL230D1	Power MOSFET	Harris Semiconductor	√										√	√						
		FRM230	Power MOSFET	Harris Semiconductor	√											√						
		FRM230R	Power MOSFET	Harris Semiconductor	√											√						
		FRM240	Power MOSFET	Harris Semiconductor	√											√						
		FRL240D1	Power MOSFET	Harris Semiconductor	√											√						
		HM5116400AJ7	4M x 4 DRAM	Hitachi	√						√											
		HM5116400Z8	4M x 4 DRAM	Hitachi	√						√											
		HM5116500AS6	4M x 4 DRAM	Hitachi	√						√											
		HM514100ZP8	4M x 1 DRAM	Hitachi	√						√											
		HM51W16100B	4M x 4 DRAM (3.3V)	Hitachi	√						√											
		HYB511000A-70	1M x 1 DRAM	Siemens Components Inc.	√						√											
		HYB5141001J-10	4M x 1 DRAM	Siemens Components Inc.	√						√											
		HYB514256-70	4M x 1 DRAM	Siemens Components Inc.	√						√											
		IBM4010708045352	4M x 4 DRAM	IBM	√						√											
		KM41C16000J-7	16M x 1 DRAM	Samsung	√						√											
		KM41C4000J-8	4M x 1 DRAM	Samsung	√						√											
		KM44V4100AJ	4M x 4 DRAM (3.3V)	Samsung	√						√											
		KM44V4100B	4M x 4 DRAM (3.3V)	Samsung	√						√											
		KM48V8100AS-16	8M x 8 DRAM	Samsung	√						√											
		LUNA ES/3	4M x 4 DRAM	IBM	√						√											
		LUNA ES Rev C	4M x 4 DRAM	IBM	√						√											
		M515100-80J9A9Z	4M x 1 DRAM	Oki Semiconductor	√						√											
		M5M44C256P	256k x 4 DRAM	Mitsubishi	√						√											
		M5M4C1000P	1M x 1 DRAM	Mitsubishi	√						√											
		MBB14100-10PSZ	4M x 1 DRAM	Fujitus	√						√											
		MCM514100Z80	4M x 1 DRAM	Motorola	√						√											
		MT4C1004C	4M x 1 DRAM	Micron Technologies	√						√											
		MT4C4001D02A	4M x 1 DRAM	Micron Technologies	√						√											
		MT4CM4B1DW	4M x 4 DRAM	Micron Technologies	√						√											
		MT4LC4001D22	4M x 1 DRAM	Micron Technologies	√						√											
		MT4LC4M4B1DJ-6	4M x 4 DRAM (3.3V)	Micron Technologies	√						√											
		MT4LC4M4E8TG	4M x 4 DRAM (3.3V)	Micron Technologies	√						√											
		MT4LC4MB1D28M	4M x 4 DRAM	Micron Technologies	√						√											
		MT5C1880CW-25	128k x 8 DRAM (5.0V)	Micron Technologies	√						√											
		SMJ44100	4M x 16 EDO DRAM (5.0V)	Texsas Instruments	√						√											
		SMJ4C1024-12JDM	1M x 1 DRAM	Texsas Instruments	√						√											
		SMX44100-80HLM	4M x 1 DRAM	Texsas Instruments	√						√											
		TC511000AP-10	1M x 1 DRAM	Toshiba	√						√											
		TC5116400J-60	4M x 4 DRAM	Toshiba	√						√											
		TC514100Z-10HDK	4M x 1 DRAM	Toshiba	√						√											
		TC514256P-10	256k x 4 DRAM	Toshiba	√						√											
		TMS416400A	4M x 4 DRAM	Texsas Instruments	√						√											
		TMS416400DJ-60	4M x 4 DRAM	Texsas Instruments	√						√											
		TMS44100DM-80	4M x 1 DRAM	Texsas Instruments	√						√											
		TMS4416-12NL	16k x 4 DRAM	Texsas Instruments	√						√											
		TP0116400AJ3B-70	4M x 4 DRAM	IBM	√						√											
		80486DX2RP	Microprocessor	Intel	√						√											
		K5-PR166ABX	Microprocessor	Advanced Micro Devices	√									√								
		62123	Optocoupler	Micropac	√						√											
		66088	Optocoupler	Micropac	√						√											
		66099	Optocoupler	Micropac	√						√											
		4N48	Optocoupler	Optek	√						√											
		4N49	Optocoupler	Micropac	√						√											
		4N55	Optocoupler	Hewlett Packard	√						√											
		6N136	Optocoupler	Micropac	√						√											
		6N140	Optocoupler	Micropac	√						√											
		6N140A	Optocoupler	Hewlett Packard	√						√											
		HCPL-5401	Optocoupler	Hewlett Packard	√						√											
		HCPL-5631	Optocoupler	Hewlett Packard	√						√											
		HCPL-6651	Optocoupler	Hewlett Packard	√						√											
		HSSR-7110	Power MOSFET Optocoupler	Hewlett Packard	√						√											
		SEDA	1773 Fibre Optic Bus	SCI	√						√											
		LM139	Voltage Comparator	National Semiconductor	√						√											
		DAC08	8 bit DAC	Analog Devices	√												√					
		DAC08	8 bit DAC	Raytheon	√												√					
		MHF2805S	DC-DC Converter	Interpint	√												√					
		MHF2812D	DC-DC Converter	Interpoint	√												√					
		62123	Optocoupler	Micropac	√												√					
		66088	Optocoupler	Micropac	√												√					
		66099	Optocoupler	Micropac	√												√					
		4N49	Optocoupler	Micropac	√												√					
		HCPL-6651	Optocoupler	Hewlett Packard	√												√					
		P2824	Optocoupler	Hamamatsu	√												√					
		PFORX12		Optical Netweorks	√												√					
		PFOTX12		Optical Netweorks	√												√					
		REF43		Analog Devices	√												√					
10, pp. 82-86	R. Lacoe	Test Structures	0.35µm CMOS Process	Chartered Semiconductor	√		√															
11, pp. 87-91	J. Benedetto	UT54ACS164245S	Cold Sparing Buffer	UTMC	√		√				√			√								
12, pp. 92-95	W. Hajdas	TMP01	Temperature Controller	Analog Devices	√				√													
		ICL7667	Power MOSFET Driver	Harris	√				√													
		AD7893	12 bit ADC	Analog Devices	√				√													
		AD9220	12 bit ADC	Analog Devices	√				√													
		AD9223	12 bit ADC	Analog Devices	√				√													
		LP2951	Voltage Regulator	National Semiconductor	√				√													
		LM2991	Voltage Regulator	National Semiconductor	√				√													
		MIC29372	Voltage Regulator	Micrel	√				√													
		MC29302	Voltage Regulator	Micrel	√				√													
		IL-C6-2048	CCD	Dalsa	√													√				
		CCD145	CCD	Loral	√													√				
		SMJ320C50	Digita; Signal Processor	Texsas Instruments	√				√		√											
			Glass Filter	Align Rite	√													√				
		LaFN21	Optical Lense	Leica	√													√				
		SF1	Optical Lense	Leica	√													√				
		SF55	Optical Lense	Leica	√													√				
		LaF2	Optical Lense	Leica	√													√				
13, pp. 96-101	J. Wall	2N2222A	Bipolar Transistor	Zetex	√	√	√															
		2N2907A	Bipolar Transistor	Zetex	√	√	√															
		ZVN2106A	MOSFET	Zetex	√	√																
		ZVP2106A	MOSFET	Zetex	√	√																
14, pp. 102-107	J. Gorelick	2N2222A	Bipolar Transistor	Motorola	√		√															
		MMBT2N2222A	Bipolar Transistor	Motorola	√		√															
		2N2907A	Bipolar Transistor	Motorola	√		√															
		MMBT2907	Bipolar Transistor	Motorola	√		√															
		CMP-02	Volatge Comparator	Analog Devices	√		√															
		OP-07	Operational Amplifier	Analog Devices	√		√															
		OP-15	Operational Amplifier	Analog Devices	√		√															
		OP-484	Operational Amplifier	Analog Devices	√		√	√														
15, pp. 108-112	K. Miller		Si and GaAs/Se Solar Cells		√					√												
16, pp. 113-116	M. Ott	FVA200240320	Optical Fiber	Polymicro	√					√												
		FIP200220240	Optical Fiber	Polymicro	√					√												
		FVP200220240	Optical Fiber	Polymicro	√					√												
		FIA100140250	Optical Fiber	Polymicro	√					√												
		FS-SN-4224	Optical Fiber	3M	√					√												
		FS-VS-2614	Optical Fiber	3M	√					√												
		FS-SC-5624	Optical Fiber	3M	√					√												
		FG-200-UCR	Optical Fiber	3M	√					√												
		FG-200-LCR	Optical Fiber	3M	√					√												
		SMCA0780	Optical Fiber	Spectran	√					√												
		SMCA0515	Optical Fiber	Spectran	√					√												
		SMCA0980D	Optical Fiber	Spectran	√					√												
		C1032XABF05444	Optical Fiber	Spectran	√					√												
		UV200/220/245P	Optical Fiber	Ceramoptec	√					√												
		WF200/220/245P	Optical Fiber	Ceramoptec	√					√												
		UV100/140/155P	Optical Fiber	Ceramoptec	√					√												
		WF100/140/155P	Optical Fiber	Ceramoptec	√					√												
			Optical Fiber	Litespec	√					√												
17, pp. 117-122	M. Saidoh		Takasaki Establishment description																	√		
18, pp. 123-127	J. Sistersin		NPTC proton beam properties																	√		

Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.

		2N6758	Power MOSFET	Harris Semiconductor	√										√	√						
		FRL230R	Power MOSFET	Harris Semiconductor	√											√						
		FSL230	Power MOSFET	Harris Semiconductor	√										√							
		2N6798	Power MOSFET	International Rectifier	√										√							
		2N7262SG	Power MOSFET	International Rectifier	√											√						
		2N72629G	Power MOSFET	International Rectifier	√											√						
		IRF210	Power MOSFET	International Rectifier	√										√							
		IRF230	Power MOSFET	International Rectifier	√										√							
		IRF240	Power MOSFET	International Rectifier	√										√							
		IRF250	Power MOSFET	International Rectifier	√										√							
		IRFF230	Power MOSFET	International Rectifier	√										√							
		IRH7230	Power MOSFET	International Rectifier	√										√							
		IRH7250	Power MOSFET	International Rectifier	√											√						
		IRHM8250	Power MOSFET	International Rectifier	√											√						
		2N6790	Power MOSFET	International Rectifier	√											√						
		IR7250	Power MOSFET	International Rectifier	√											√						
		IRHF7230	Power MOSFET	International Rectifier	√											√						
		IRF220	Power MOSFET	International Rectifier	√										√							
		IRFF220	Power MOSFET	International Rectifier	√										√							
		IRFF230	Power MOSFET	International Rectifier	√										√	√						
		IRFM250	Power MOSFET	International Rectifier	√										√							
		IRHM7250	Power MOSFET	International Rectifier	√										√	√						
		IR7250	Power MOSFET	International Rectifier	√											√						
		IXFH50N20	Power MOSFET	Ixys Corporation	√										√							
		25N20	Power MOSFET	Radio Corporation of America	√										√							
		IRF230	Power MOSFET	Radio Corporation of America	√										√							
		IRF250	Power MOSFET	Radio Corporation of America	√										√							
		IRFF230	Power MOSFET	Radio Corporation of America	√										√							
		2N6790	Power MOSFET	Siliconix	√										√							
		2N6851	Power MOSFET	Siliconix	√										√							
		IRF250	Power MOSFET	Siliconix	√										√							
		IRFF230	Power MOSFET	Siliconix	√											√						
		FRL234	Power MOSFET	Harris Semiconductor	√											√						
		FRL234R	Power MOSFET	Harris Semiconductor	√											√						
		FRL254R	Power MOSFET	Harris Semiconductor	√											√						
		TA17463RH	Power MOSFET	Harris Semiconductor	√										√							
		TA17663	Power MOSFET	Harris Semiconductor	√										√							
		FRF254R	Power MOSFET	Harris Semiconductor	√											√						
		FRF264D	Power MOSFET	Harris Semiconductor	√											√						
		FRF264R	Power MOSFET	Harris Semiconductor	√											√						
		FRM234	Power MOSFET	Harris Semiconductor	√										√							
		FSL234	Power MOSFET	Harris Semiconductor	√										√							
		FSL254	Power MOSFET	Harris Semiconductor	√										√							
		FSF254R	Power MOSFET	Harris Semiconductor	√											√						
		IRH7264SE	Power MOSFET	International Rectifier	√										√	√						
		IRH254	Power MOSFET	International Rectifier	√										√	√						
		IXFM40N25R	Power MOSFET	Ixys Corporation	√										√							
		30M85BNFR	Power MOSFET	Advanced Power Technology	√										√							
		IXTM35N30	Power MOSFET	Ixys Corporation	√										√							
		IRFF320	Power MOSFET	Unitrode	√										√							
		APT40M42	Power MOSFET	Advanced Power Technology	√										√							
		FRL430	Power MOSFET	Harris Semiconductor	√											√						
		IRHM7360	Power MOSFET	Harris Semiconductor	√											√						
		2N6800	Power MOSFET	Harris Semiconductor	√										√							
		IRF310	Power MOSFET	International Rectifier	√										√							
		IRF330	Power MOSFET	International Rectifier	√										√							
		IRF340	Power MOSFET	International Rectifier	√										√							
		IRF350	Power MOSFET	International Rectifier	√										√							
		IRF360	Power MOSFET	International Rectifier	√										√							
		IRH7264SE	Power MOSFET	International Rectifier	√											√						
		2N6780	Power MOSFET	International Rectifier	√										√							
		IRFF330	Power MOSFET	International Rectifier	√										√							
		2N6786	Power MOSFET	International Rectifier	√											√						
		IRF350	Power MOSFET	Siliconix	√										√							
		IXTM21N45	Power MOSFET	Ixys Corporation	√										√							
		IXTM21N45R	Power MOSFET	Ixys Corporation	√										√							
		2N6794	Power MOSFET	Harris Semiconductor	√										√							
		2N6802	Power MOSFET	Harris Semiconductor	√										√	√						
		EN469	Power MOSFET	Harris Semiconductor	√											√						
		FRL430D	Power MOSFET	Harris Semiconductor	√										√	√						
		FRL430D1	Power MOSFET	Harris Semiconductor	√											√						
		FRM450	Power MOSFET	Harris Semiconductor	√											√						
		FRM450R	Power MOSFET	Harris Semiconductor	√											√						
		IR450	Power MOSFET	Harris Semiconductor	√										√							
		TA17465	Power MOSFET	Harris Semiconductor	√										√							
		TA17465RH	Power MOSFET	Harris Semiconductor	√										√							
		2N6762	Power MOSFET	Harris Semiconductor	√										√							
		FRL430D	Power MOSFET	Harris Semiconductor	√										√							
		FRM450	Power MOSFET	Harris Semiconductor	√											√						
		FRM450R	Power MOSFET	Harris Semiconductor	√											√						
		FSF450	Power MOSFET	Harris Semiconductor	√										√							
		IRF440	Power MOSFET	Harris Semiconductor	√											√						
		FSF450	Power MOSFET	Harris Semiconductor	√										√							
		FSL430	Power MOSFET	Harris Semiconductor	√										√							
		FSL430D	Power MOSFET	Harris Semiconductor	√										√							
		2N6802	Power MOSFET	International Rectifier	√										√							
		IR7450	Power MOSFET	International Rectifier	√											√						
		IRF430	Power MOSFET	International Rectifier	√										√							
		IRF440	Power MOSFET	International Rectifier	√										√							
		IRF450	Power MOSFET	International Rectifier	√										√							
		IRF460	Power MOSFET	International Rectifier	√										√							
		IRFE430	Power MOSFET	International Rectifier	√										√							
		IRFM450	Power MOSFET	International Rectifier	√										√							
		IRH7450SE	Power MOSFET	International Rectifier	√										√	√						
		IR420	Power MOSFET	International Rectifier	√										√							
		IRF440	Power MOSFET	International Rectifier	√										√	√						
		IRFF430	Power MOSFET	International Rectifier	√										√							
		IRH7450	Power MOSFET	International Rectifier	√											√						
		IRHM7450	Power MOSFET	International Rectifier	√											√						
		IR7450	Power MOSFET	International Rectifier	√											√						
		IRF420	Power MOSFET	International Rectifier	√										√							
		2N50	Power MOSFET	Ixys Corporation	√										√							
		20N60	Power MOSFET	Ixys Corporation	√										√							
		MTW20N50E	Power MOSFET	Motorola	√										√							
		IRF440	Power MOSFET	Motorola	√										√							
		2N6794	Power MOSFET	Siliconix	√										√							
		2N6802	Power MOSFET	Siliconix	√										√							
		0350N5	Power MOSFET	STX	√										√							
		TA9783	IGBT	Harris Semiconductor	√											√						
		IRGAC50U	IGBT	International Rectifier	√										√							
		1002RBN	Power MOSFET	Advanced Power Technology	√										√							
		1001R1AN	Power MOSFET	Advanced Power Technology	√										√	√						
		IRFPG50	Power MOSFET	International Rectifier	√										√							
		IRFAG130	Power MOSFET	International Rectifier	√										√	√						
		10N100	Power MOSFET	Ixys Corporation	√										√	√						
		20N120E2	IGBT	Harris Semiconductor	√										√							
		FRK9150R	Power MOSFET	Harris Semiconductor	√											√						
		FRK9160	Power MOSFET	Harris Semiconductor	√											√						
		FRK9160R	Power MOSFET	Harris Semiconductor	√											√						
		FRM9140	Power MOSFET	Harris Semiconductor	√											√						
		FRM9140R	Power MOSFET	Harris Semiconductor	√											√						
		IRF9150	Power MOSFET	Harris Semiconductor	√											√						
		2N6849	Power MOSFET	Harris Semiconductor	√											√						
		RKL1P10	Power MOSFET	Harris Semiconductor	√											√						
		IRF9140	Power MOSFET	International Rectifier	√											√						
		IRF9150	Power MOSFET	International Rectifier	√											√						
		IRFF9130	Power MOSFET	International Rectifier	√											√						
		IRH9150	Power MOSFET	International Rectifier	√											√						
		IRHF9130	Power MOSFET	International Rectifier	√											√						
		2N6845	Power MOSFET	International Rectifier	√											√						
		2N6804	Power MOSFET	International Rectifier	√											√						
		IRF9130	Power MOSFET	International Rectifier	√											√						
		IRFF9122	Power MOSFET	International Rectifier	√											√						
		2N6804	Power MOSFET	International Rectifier	√											√						
		12P10	Power MOSFET	Radio Corporation of America	√											√						
		FRM9240R	Power MOSFET	Harris Semiconductor	√											√						
		FRM9250	Power MOSFET	Harris Semiconductor	√											√						
		IRFF9230	Power MOSFET	International Rectifier	√											√						
		IRF9240	Power MOSFET	International Rectifier	√											√						
		IRF9230	Power MOSFET	International Rectifier	√											√						
		2N6851	Power MOSFET	International Rectifier	√											√						
4, pp. 39-50	M. O'Bryan	5C1008FE-M	128k x 8 SRAM	Austin																		
		AS5C512K8	512k x 8 SRAM	Austin	√						√			√								
		AS5C1001SF-15E	1M bit EEPROM	Hitachi	√						√			√								
		28C010TFE	128K x 8 EEPROM	Space Electronics Inc.	√						√			√								
		57C256F-35	EEPROM	WSI	√						√			√								
		Luna ES Rev. c	4M x 4 DRAM	IBM	√						√			√								
		67204EV-50	4K x 9 FIFO	Matra-TEMIC	√						√			√								
		A1280A	FPGA	Actel	√						√											
		22V10RPFE	PAL	Space Electronics Inc.	√						√											
		JT 22V10-10	PAL	Cypress	√						√											
		OP400	Operational Amplifier	Precision Monolithics inc.	√						√			√								
		LM139	Voltage Comparator	National Semiconductor	√						√											
		1840RP	Analog Multiplexer	Space Electronics Inc.	√							√		√								
		REF43	Voltage Reference	Analog Devices	√							√		√								
		HCPL6651	Optocoupler	Hewlett Packard	√									√								
		HCPL5631	Optocoupler	Hewlett Packard	√				√													
		4N48	Optocoupler	Optek	√							√						√				
		4N48	Optocoupler	Micropac	√							√							√			
		4N55	Optocoupler	Hewlett Packard	√							√						√				
		6N140	Optocoupler	Micropac	√							√							√			
		6N140A	Optocoupler	Hewlett Packard	√							√										
		6N136	Optocoupler	Micropac	√							√										
		P2824	Optocoupler	Hammamatsu	√							√										
		HCPL5401	Optocoupler	Hewlett Packard	√							√										
		66099	Optocoupler	Micropac	√							√						√				
		66123	Optocoupler	Micropac	√							√										
		4N49	Optocoupler	Micropac	√							√										
		66088	Optocoupler	Micropac	√							√										
		ASA2805S	DC-DC Converter	Advanced Analog	√							√										
		ATW2805	DC-DC Converter	Advanced Analog	√													√				
		AHF2812	DC-DC Converter	Advanced Analog	√							√			√							
		7804	DC-DC Converter	Advanced Analog	√							√			√							
		MHF+2805S	DC-DC Converter	Interpoint	√							√			√							
		MHF+2812D	DC-DC Converter	Interpoint	√							√			√							
		MHF+2815D	DC-DC Converter	Interpoint	√							√						√				
		AD976	16 bit ADC	Analog Devices	√							√						√				
		7805LPRP	16 bit ADC	Space Electronics Inc.	√							√						√				
		54ABT245	Driver	National Semiconductor	√						√				√							
		54ABT245	Driver	Phillips	√						√				√							
		SN54ABT245AJ	Driver	Texsas Instruments	√						√			√								
		54LS03	Nand Gate	Texsas Instruments	√						√			√								
		54ALS05	Inverter Gate	Texsas Instruments	√						√			√								
		54ALS1035	Buffer/Driver	Texsas Instruments	√						√											
		MX7847TQ	12 bit DAC	Maxim	√						√											
		DAC08	8 bit DAC	Analog Devices	√						√											
		DAC08	8 bit DAC	Raytheon	√							√		√								
		Flashdisk 2M bit	PCMCIA Flash Disk	Sandisk	√				√													
		MG80486DX266	Microprocessor	Intel	√				√													
		Mongooose V	Microprocessor	Synova	√						√											
		MIC4429AJB	Linear Driver	Micrel	√						√			√								
		OD880WJ	LED	OPTO Diode	√						√			√								
		SDL5501V1	LED	Spectra Diode	√						√			√								
		SEDS II	1772 Fiber Optic Bus	SCI	√															√		
		PFORX12	Receiver	Optical Networks Inc.	√															√		
		PFOTX12	Transmitter	Optical Networks Inc.	√						√											
		FUGA 15	CMOS Image Driver	C-Cam Technology	√				√		√											

					Data		Total Ionizing Dose				Single Event Effects							Displacement Damage					
Paper No., Page No.	First Author	Part No.	Type	Manufacture	Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons	Facilities	Standard	Environment
		UT1553BRTI	1553 Remote Terminal	UTMC	√				√		√											
5, pp. 51-57	S. Crain	MG80C286012/883	Microprocessor	Harris	√									√								
		MG80C186-12/B	Microprocessor	Intel	√						√											
		SMJ320C30	Digiatal Signal Processor	Texsas Instruments	√						√			√								
		SMJ320C40	Digiatal Signal Processor	Texsas Instruments	√						√			√								
		SMJ320C50	Digiatal Signal Processor	Texsas Instruments	√						√			√								
6, pp. 58-67	S. Bee	AD676AD	16 bit ADC	Analog Devices	√							√	√									
		AD7884AQ	16 bit ADC	Analog Devices	√							√										
		AD7893SQ	12 bit ADC	Analog Devices	√							√										
7, pp. 68-73	C. Poivey	CXK581000B	128k x 8 SRAM	Sony	√		√				√											
		IS61C1024-20M	128k x 8 SRAM	ISSI	√		√				√											
		HM628128BLP-7	128k x 8 SRAM	Hitachi	√		√				√											
		HM628512ALP-7	512k x 8 SRAM	Hitachi	√		√				√											
		AS5C4008CW-35E	512k x 8 SRAM	Austin/Motorola	√		√				√											
		MCM6246WJ20	512k x 8 SRAM	Motorola	√		√				√			√								
		KM684002AJ-17	512k x 8 SRAM	Samsung	√		√				√											
8, pp. 74-79	R. Harboe-Sorensen	M1611D2	16M bit DRAM	Siemens	√						√											
		M1606C6	16M bit DRAM	IBM/Siemens	√						√											
		HM51W16100C	16M bit DRAM	Hitachi	√						√											
		KM44V4100AJ	16M bit DRAM	Samsung	√						√											
		M1611D2	16M bit DRAM	Siemens	√						√											
		MT4LC4M4	16M bit DRAM	Micron	√						√											
		M1611D2	16M bit DRAM	Siemens	√		√				√											
		0117400BT1E-60	16M bit DRAM	IBM/Siemens	√		√				√											
		0117400BT1F-60	16M bit DRAM	Hitachi	√		√				√											
		51W16406BLS6	16M bit DRAM	Samsung	√		√				√											
		KM44V4100ALS-7	16M bit DRAM	IBM/Siemens	√		√				√											
		HYB3116405BT-60	16M bit DRAM	Micron	√		√				√											
		MT4LC4M4E8TG	16M bit DRAM	Micron	√		√				√											
		KM44V4100AS--6	16M bit DRAM	Samsung	√		√				√											
		KM44V4100BS-6	16M bit DRAM	Samsung	√						√											
9, pp. 80-85	D. Kerwin	Test Structures	Commercial RadHard	UTMC	√		√				√			√								
10, pp. 86-90	J. Benedetto	Test Structures	0.8µm ASIC	UTMC	√		√															
11, pp. 91-95	S. Mulford	MF28F008	1M x 8 Flash EEPROM		√		√										√					
		DA28F016SV-70	16M bit Flash EEPROM		√		√										√					
		MB814260	256k x 16 DRAM		√		√										√					
		MT4LC4M4E8	4M x 4 DRAM		√		√										√					
		EPM5032	EPLD		√		√										√					
		80486DX4-100	Microprocessor		√		√										√					
		CL-GD5446-HCA	VGA Controller		√		√										√					
		82C832	PCI Bridge		√		√										√					
		MR82C59A/B	Priority Interupt Controller		√		√										√					
		FDC37C932	Ultra I/O Controller		√		√										√					
		SAB82532	Serial Communication Controller		√		√										√					
		MAX705	Microprocessor Supervisor		√		√										√					
		LT1081MJ-883	RS232 Driver/Receiver		√												√		√			
		LT1083	Voltage Regulator		√														√			
12, pp. 96-99	G. Lyons	Test Structures	UTSi Process	Perigrine Semiconductor	√		√															
13, pp. 100-103	D. Nguyen	KM29N1600	2M x 8 Flash Memory	Samsung	√		√															
		28F016SV	16M bit Flash Memory	Intel	√		√															
14, pp. 104-110	R. Lacoe	Test Structures	0.35µm CMOS Process	Hewlett Packard	√		√															
15, pp. 111-116	D. Hiemstra	HFA1135	Operational Amplifier	Harris	√		√										√		√			
16, pp. 117-120	C. Lee	AD537	Voltage to Frequency Converter	Analog Devices	√		√															
		AD652	Voltage to Frequency Converter	Analog Devices	√		√															
		AD654	Voltage to Frequency Converter	Analog Devices	√		√															
17, pp. 121-126	J. Black	AD9200	10 bit ADC	Analog Devices	√		√															
		HI5746	10 bit ADC	Harris	√		√															
			10 bit ADC	Burr-Brown	√		√															
		SPT7855	10 bit ADC	Signal Processing Technology	√		√															
		XRD64L15	10 bit ADC	EXAR	√		√															
		AD9042	12 bit ADC	Analog Devices	√		√															
			12 bit ADC	Harris	√		√															
			12 bit ADC	Burr-Brown	√		√															
			12 bit ADC	Comlinear	√		√															
			14 bit ADC	Analog Devices	√		√															
			14 bit ADC	Datel	√		√															
18, pp. 127-131	J . Gorelick	2N2222A	Bipolar Transistor	Motorola	√		√															
		2N2484	Bipolar Transistor	Motorola	√		√															
		2N2605	Bipolar Transistor	Motorola	√		√															
		2N2605	Bipolar Transistor	National Semiconductor	√		√															
		2N3384	JFET	Siliconix	√		√															
		2N3700	Bipolar Transistor	Motorola	√		√															
		2N4033	Bipolar Transistor	National Semiconductor	√		√															
		2N4407	Bipolar Transistor	Motorola	√		√															
		2N4857	JFET	National Semiconductor	√		√															
		2N4857	JFET	Siliconix	√		√															
		2N6303	Bipolar Transistor	PPC	√		√															
		2N6849	Power MOSFET	International Rectifier	√		√															
		AD8009	Operational Amplifier	Analog Devices	√		√															
		CMP-02	Analog Comparator	Analog Devices	√		√															
		OP484	Operational Amplifier	Analog Devices	√		√															
		RH1014	Operational Amplifier	Linear Technology	√		√															
19, pp. 132-136	C. Lee	OPA241	Operational Amplifier	Burr-Brown	√		√															
		OPA336	Operational Amplifier	Burr-Brown	√		√															
		LMC6462	Operational Amplifier	National Semiconductor	√		√															
		MAX409	Operational Amplifier	Maxim	√		√															
		MAX473	Operational Amplifier	Maxim	√		√															
20, pp. 137-141	O. Quittard	74HCU04	Inverter	Harris	√		√															
		74HCU04	Inverter	Motorola	√		√															
		74HCU04	Inverter	Texsas Instruments	√		√															
		74C04	Inverter	National Semiconductor	√		√															
		74HC04	Inverter	National Semiconductor	√		√															
		74AC04	Inverter	National Semiconductor	√		√															
21, pp. 142-147	A. Sharma	AD976	16 bit ADC	Analog Devices	√		√															
		AD9050	10 bit ADC	Analog Devices	√		√															
		AD570	8 bit ADC	Analog Devices	√		√															
		MX7847	12 bit ADC	Maxim	√		√															
		AD562	12 bit ADC	Analog Devices	√		√															
22, pp. 148-151	A. Williams		NPL electron LINAC properties																√			
23, pp. 152-156	W. Hajdas		PSI PIF proton beam properties																√			
24, pp. 156-163	M. McMahan		LBNLcyclotron properties																√			
25, pp. 164-169	A. Artamonov		REIS-IE X-ray tester properties																			
26, pp. 170-176	P. Layton	411	Analog Switch																			
		54ACT244	Octal Buffer	Space Electronics Inc.	√		√															
		7684RP	8 bit ADC	Space Electronics Inc.	√		√															
		28C010TRP	1M bit EEPROM	Space Electronics Inc.	√		√															
		SHM-12RP	Sample and Hold	Space Electronics Inc.	√		√															
		306RP	Analog Multiplexer	Space Electronics Inc.	√		√															
		358RP	Analog Multiplexer	Space Electronics Inc./Maxim	√		√															
		7182RP	CCD Driver	Space Electronics Inc.	√		√															
		7809LPRP	16 bit ADC	Space Electronics Inc.	√		√															
		32C408BRP	4M bit SRAM	Space Electronics Inc.	√						√			√								
		80486DX2RP	Microprocessor	Space Electronics Inc.	√						√			√								
		22V10RP	PLD	Space Electronics Inc.	√						√			√								
		22V10FRP	PLD	Space Electronics Inc.	√						√			√								
		10050LPRP	FPGA	Space Electronics Inc.	√						√			√								
		7684	8 bit ADC	Exar	√						√			√								
27, pp. 177-180	M. Ohlsson	XC4010E	FPGA	Xilinx	√						√											
		XC4010XL	FPGA	Xilinx	√						√											

Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.

					Data		Total Ionizing Dose				Single Event Effects							Displacement Damage					
Paper No., Page No.	First Author	Part No.	Type	Manufacture	Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons	Facilities	Standard	Environment
1, pp. 1-13	D. Nichols	80C31E	Microprocessor	Matra	√						√			√								
		MC80C52EH135-E	Microprocessor	Matra	√						√			√								
		80C52E	Microprocessor	Matra	√									√								
		80486DX	Microprocessor	Advanced Micro Devices	√						√			√								
		79R3081	Microprocessor	Integrated Device Technologies	√									√								
		80386DX-20B	Microprocessor	Intel	√						√			√								
		80386DX-25	Microprocessor	Intel	√						√			√								
		MQ80386-25B	Microprocessor	Intel	√						√			√								
		MQ82380-25B	Microprocessor	Intel	√						√			√								
		80486DX-33	Microprocessor	Intel	√						√			√								
		80486A-21	Microprocessor	Space Electronics Inc.	√						√			√								
		80486DX2-66	Microprocessor	Intel	√						√			√								
		80486DX4	Microprocessor	Intel	√						√			√								
		T805	Transputer	INMOS Corporation	√						√			√								
		RAD6000	Microprocessor	Loral Federal Systems	√						√			√								
		68HC811	Microprocessor	Motorola	√						√			√								
		MPC603	Microprocessor	Motorola	√						√											
		XC68302	Microprocessor	Motorola	√						√			√								
		XC6802	Microprocessor	Motorola	√						√											
		SH451	SCSI Controller	Circus Logic Incorporated	√						√											
		68HC811	Microprocessor	Motorola	√						√			√								
		M82C59A	Priority Interupt Controller	Harris Semiconductor	√						√			√								
		82380-16	DMA Controller	Intel	√						√			√								
		82380-20B	DMA Controller	Intel	√						√			√								
		82C54	Timer	Intel	√						√			√								
		D8255A	Programmable Peripheral Controller	Intel	√						√			√								
		AMAS2901FB	Microprocessor Slice	Plessey Semiconductor	√						√			√								
		ADSP2100AGU	Digital Signal Processor	Analog Devices	√						√			√								
		ADSP2181ES	Digital Signal Processor	Analog Devices	√						√			√								
		ADSP2181KS	Digital Signal Processor	Analog Devices	√						√			√								
		ADSP21020	Digital Signal Processor	Analog Devices	√						√			√								
		DSP32C	Digital Signal Processor	AT&T	√						√			√								
		96002	Digital Signal Processor	Motorola	√						√			√								
		320C26	Digital Signal Processor	Texsas Instruments	√									√								
		TMS320C30GB	Digital Signal Processor	Texsas Instruments	√						√			√								
		SMX320C30GB	Digital Signal Processor	Texsas Instruments	√						√			√								
		SMJ320C30GB	Digital Signal Processor	Texsas Instruments	√						√			√								
		PDSP16510A	FFT Processor	Plessey Semiconductor	√						√			√								
		80387-20B	Math Coprocessor	Intel	√						√			√								
		67201F	512 x 9 FIFO	Matra	√						√			√								
		67202F	1K x 9 FIFO	Matra	√						√			√								
		67203E	2K x 9 FIFO	Matra	√						√			√								
		67204E	4K x 9 FIFO	Matra	√						√			√								
		67205E	8K x 9 FIFO	Matra	√						√			√								
		74LVQ244	Buffer	National Semiconductor	√									√								
		LVC245	Buffer	Phillips	√									√								
		LV244	Buffer	Phillips	√									√								
		F100331	D Flip Flop	National Semiconductor	√						√			√								
		F100341	Shift Register	National Semiconductor	√						√			√								
		CD4014	Shift Register	Harris Semiconductor	√						√			√								
		CD54HC4096	Phased Lock Loop	Harris Semiconductor	√						√			√								
		54HC4046	Phased Lock Loop	National Semiconductor	√									√								
		CY100E474	SRAM	Cypress Semiconductor	√						√			√								
		MBM10474A	SRAM	Fujitsu	√						√			√								
		HM65162	SRAM	Harris Semiconductor	√						√			√								
		HM628128	SRAM	Hitachi	√						√			√								
		L7C199DC-35	SRAM	Logic Devices Incorporated	√						√			√								
		MT5C1008	SRAM	Micron Technologies	√						√			√								
		MT5C2568-35	SRAM	Micron Technologies	√						√			√								
		MT5C2568-70	SRAM	Micron Technologies	√						√			√								
		MT5C2568C-25	SRAM	Micron Technologies	√						√			√								
		65162E	SRAM	Matra	√						√			√								
		65262E	SRAM	Matra	√						√			√								
		HM65656	SRAM	Matra	√						√											
		65656F	SRAM	Matra	√						√			√								
		65664E	SRAM	Matra	√						√			√								
		65687E	SRAM	Matra	√						√			√								
		65697F	SRAM	Matra	√						√			√								
		67130E	Dual Port RAM	Matra	√						√			√								

67132E	Dual Port RAM	Matra	√						√			√									
67140E	Dual Port RAM	Matra	√						√			√									
67142E	Dual Port RAM	Matra	√						√			√									
67024E	Dual Port RAM	Matra	√						√			√									
670D5E	Dual Port RAM	Matra	√						√			√									
67025E	Dual Port RAM	Matra	√						√			√									
UPB10474	SRAM	Nippon Electric Corporation	√						√			√									
PDM41256SA250	SRAM	Paradigm Corporation	√						√			√									
KM684002	SRAM	Samsung	√									√									
CXK58258AP-1020	SRAM	Sony	√						√			√									
MB8116100-60PJ	DRAM	Fujitsu	√						√			√									
MB8116400-60PJ	DRAM	Fujitsu	√						√			√									
LUNA-ES2	DRAM	IBM	√						√			√									
0116400J1C-70	DRAM	IBM	√						√			√									
MT4C4001	DRAM	Micron Technologies	√						√												
MT4C4M4B1DW	DRAM	Micron Technologies	√						√			√									
M5M44100	DRAM	Mitsubishi	√									√									
M5M467800AJ	DRAM	Mitsubishi	√									√									
MDM14000GMB-80	DRAM	Mitsubishi	√									√									
KM44C4000J-6	DRAM	Samsung	√						√			√									
KM44C4000AJ-7	DRAM	Samsung	√						√			√									
KM41C16000J	DRAM	Samsung	√						√			√									
KM48V8004AK-6	DRAM	Samsung	√						√			√									
SMJ44100	DRAM	Texsas Instruments	√						√												
TMS416400	DRAM	Texsas Instruments	√						√												
TMS416400A	DRAM	Texsas Instruments	√						√			√									
TMS416400DJ-60	DRAM	Texsas Instruments	√						√												
TMS416400-Rev.B	DRAM	Texsas Instruments	√						√			√									
SMJ416400-Rev.B	DRAM	Texsas Instruments	√						√												
TC5117400J-6	DRAM	Toshiba	√						√			√									
TC51832P	DRAM	Toshiba	√						√												
28F010-120JC	Flash Memory	Advanced Micro Devices	√						√			√									
CAT28F010P-12	Flash Memory	Catalyst	√						√			√									
DPZ128X16A3	Flash Memory	Hitachi	√						√			√									
P28F010-120	Flash Memory	Intel	√						√			√									
28F010	Flash Memory	Intel	√									√									
28F016SV	Flash Memory	Intel	√						√			√									
28F016SA	Flash Memory	Intel	√						√			√									
28F016SB	Flash Memory	Intel	√						√			√									
P28F512-120	Flash Memory	Intel	√						√			√									
M5M28F101P-12	Flash Memory	Intel	√						√			√									
KM29N16000	Flash Memory	Samsung	√						√			√									
KM29N32000	Flash Memory	Samsung	√						√			√									
M28F101-150PI	Flash Memory	SGS Thomson	√						√			√									
TMS28F512-120C3NL	Flash Memory	Texsas Instruments	√						√			√									
CY7C261	PROM	Cypress Semiconductor	√						√			√									
UT28F64	PROM	UTMC	√									√									
28C1024	EEPROM	Atmel Corporation	√						√			√									
HN58C1001	EEPROM	Hitachi	√						√			√									
MEM8129	EEPROM	Hitachi	√						√			√									
MEM8129W-20	EEPROM	Hitachi	√						√			√									
SA28C256ARP	EEPROM	Space Electronics Inc.	√						√			√									
SA28C256ERPDB	EEPROM	Space Electronics Inc.	√						√			√									
28C64C-20P1	EEPROM	SGS Thomson	√						√			√									
28C010D-20	EEPROM	Xicor Incorporated	√						√												
28C512D-15	EEPROM	Xicor Incorporated	√						√												
CY7C263-25PC	UVEPROM	Cypress Semiconductor	√						√			√									
HN27C256HG-70	UVEPROM	Hitachi	√						√			√									
M5M27C256K-12	UVEPROM	Mitsubishi	√						√			√									
M27C256B-15XFI	UVEPROM	Toshiba	√						√			√									
M27C512-15I	UVEPROM	SGS Thomson	√						√			√									
SMJ27C512-20JM	UVEPROM	Texsas Instruments	√						√			√									
HN27C101AG-15	UVEPROM	Hitachi	√						√			√									
M5M27C101K-15	UVEPROM	Mitsubishi	√						√			√									
TMS27C010A-15	UVEPROM	Texsas Instruments	√						√			√									
D27C010-150V10	UVEPROM	Intel	√						√			√									
M27C1001-15FI	UVEPROM	SGS Thomson	√						√			√									
D27C010-15	UVEPROM	Nippon Electric Corporation	√						√			√									
M27C4001-12FI	UVEPROM	SGS Thomson	√						√			√									
TC574000D-150	UVEPROM	Toshiba	√						√			√									
SMJ27C040-12JM	UVEPROM	Texsas Instruments	√						√			√									
388052	ASIC	Litton	√									√									
Q3216	ASIC	Qualcomm Incorporated	√						√			√									
Q3236	ASIC	Qualcomm Incorporated	√						√			√									
A1020B	FPGA	Actel	√						√			√									
1020B	FPGA	Actel	√									√									
RH1020	FPGA	Actel	√									√									
A1280A	FPGA	Actel	√						√			√									
A1280XL	FPGA	Actel	√						√			√									
RH1280	FPGA	Actel	√						√			√									
A1460A	FPGA	Actel	√						√			√									
A14100A	FPGA	Actel	√						√			√									
AT6002-JC	FPGA	Atmel Corporation	√						√			√									
ATT2C04-2	FPGA	AT&T	√						√			√									
CLAY-31	FPGA	National Semiconductor	√						√			√									
XC3090A	FPGA	Xilinx	√						√			√									
UT22VP10	PAL	UTMC	√						√			√									
AM7968	TAXI Transmitter	Advanced Micro Devices	√						√			√									
AM7969	TAXI Receiver	Advanced Micro Devices	√									√									
AD4854AQ	Transceiver	Analog Devices	√									√									
AD1485	Transceiver	Analog Devices	√									√									
LTC1480	Transceiver	Linear Technology	√									√									
LTC1487	Transceiver	Linear Technology	√									√									
MAX485E	Transceiver	Maxim	√									√									
MAX3485	Transceiver	Maxim	√																		
32C278TM	Transceiver	National Semiconductor	√									√									
SP485ES	Transceiver	Sipex	√									√									
SN75LBC176	Transceiver	Texsas Instruments	√									√									
UT63M147-BPC	1553 Transceiver	UTMC	√						√			√									
QS3384DM	Bus Quickswitch	Quality Semiconductor	√									√									
RH1056	Operational Amplifier	Linear Technology	√							√											
LM108A	Operational Amplifier	Linear Technology	√							√		√									
RH108A	Operational Amplifier	Linear Technology	√							√											
UC1802	Pulse Width Modulator	Unitrode	√						√			√									
UC1806	Pulse Width Modulator	Unitrode	√									√									
UC1825A	Pulse Width Modulator	Unitrode	√						√			√									
UC1845A	Pulse Width Modulator	Unitrode	√						√			√									
Q3216	Pulse Width Modulator	QAL	√						√			√									
Q3236	Pulse Width Modulator	QAL	√						√			√									
LM111	Comparator	National Semiconductor	√							√											
LM139	Comparator	National Semiconductor	√																		
LM139	Comparator	Precision Monolithics	√																		
TC4428	MOSFET Driver	Telecom Semiconductor	√									√									
MIC4427	MOSFET Driver	Micrel	√						√			√									
DS26C32AMJ	Differential Line Receiver	National Semiconductor	√									√									
AD7225TQ	8 bit DAC	Analog Devices	√									√									
DAC8800	8 bit DAC	Analog Devices	√						√			√									
MX7545TQ	12 bit DAC	Maxim	√						√			√									
SP9380	18 bit DAC	Sipex	√						√			√									
HI1276	8 bit ADC	Harris Semiconductor	√									√									
SPT7725	8 bit ADC	Sipex	√									√									
TMC1175	8 bit ADC	TRW	√									√									
AD573	10 bit ADC	Analog Devices	√																		
AD773A	10 bit ADC	Analog Devices	√									√									
AD12062	12 bit ADC	Analog Devices	√									√									
AD574A	12 bit ADC	Analog Devices	√						√			√									
AD42961	12 bit ADC	Analog Devices	√						√			√									
RBC-12	12 bit ADC	Analog Devices	√						√			√									
CS5012A	12 bit ADC	Crystal Semiconductor	√						√			√									
LTC1419	14 bit ADC	Linear Technology	√									√									
ADS7809	16 bit ADC	Burr-Brown	√						√			√									
DDC101	20 bit ADC	Burr-Brown	√									√									
ICL7662MTV-4	Switchmode Converter	Maxim	√						√			√									
ATR2815D	DC-DC Converter	Lambda	√						√			√									
ATW2805S	DC-DC Converter	Lambda	√						√			√									
MHF2815D	DC-DC Converter	Interpoint	√						√												
MHF2805D	DC-DC Converter	Interpoint	√						√												
MCH2805S	DC-DC Converter	Interpoint	√						√			√									
2680M-S05F	DC-DC Converter	Modular Device Inc.	√						√			√									
MDI2680	DC-DC Converter	Modular Device Inc.	√						√												
MDI2690R-D15F	DC-DC Converter	Modular Device Inc.	√						√			√									
5690R-D15	DC-DC Converter	Modular Device Inc.	√						√												
DP83932CVF	Network Interface Controller	National Semiconductor	√									√									
DP83956AVLJ	Network Interface Controller	National Semiconductor	√									√									
DP83950BVQB	Network Interface Controller	National Semiconductor	√									√									
DP8392CV	Transceiver	National Semiconductor	√						√			√									
AM79C98	Transceiver	Advanced Micro Devices	√						√			√									
AD652	Voltage to Frequency Converter	Analog Devices	√									√									
AD630	Balanced Modulator	Analog Devices	√						√												
AD783	Sample and Hold	Analog Devices	√						√			√									
IMSC011	Microprocessor Peripheral	INMOS Corporation	√									√									
	Autocorrelator	Space Borne Incorporated	√						√			√									
IMP50E10	Programmable Analog Array	IMP	√						√			√									
HSSR-7110	Programmable Analog Array	IMP	√						√			√									
HX2300	Test Structure	Honeywell	√						√			√									
HM62256	32k x 8 SRAM	Hitachi	√						√			√									
HM62256R	32k x 8 SRAM	Hitachi	√						√			√									
HM62382H	32k x 8 SRAM	Hitachi	√						√			√									
HM6264	8k x 8 SRAM	Hitachi	√						√			√									
HM6264A	8k x 8 SRAM	Hitachi	√						√			√									
MSM8128	128k x 8 SRAM	Hitachi	√									√									
HM628128	128k x 8 SRAM	Hitachi	√						√			√									
HM628512	512k x 8 SRAM	Hitachi	√						√			√									
2568CRH	32k x 8 SRAM	IBM	√						√			√									
70C25	SRAM	Integrated Device Technologies	√						√			√									
IDT71256	32k x 8 SRAM	Integrated Device Technologies	√						√			√									
IDT7134	4k x 8 SRAM	Integrated Device Technologies	√						√			√									
IMS1601EPI	64k x 1 SRAM	INMOS Corporation	√						√			√									
IN6303SL	8k x 8 SRAM	INMOS Corporation	√						√			√									
	32k x 8 SRAM	Micron Technologies	√						√			√									
MT5C1001	1M x 1 SRAM	Micron Technologies	√						√			√									
MT5C1008	128k x 8 SRAM	Micron Technologies	√						√			√									
MT5C1008C	128k x 8 SRAM	Micron Technologies	√									√									
MT5C1009	128k x 8 SRAM	Micron Technologies	√						√			√									
MT5C2568	32k x 8 SRAM	Micron Technologies	√						√			√									
MT5C2568-35	32k x 8 SRAM	Micron Technologies	√						√			√									
MT5C2568-70	32k x 8 SRAM	Micron Technologies	√						√			√									
MT5C2568C	32k x 8 SRAM	Micron Technologies	√						√			√									
MSM8128K	128k x 8 SRAM	Mostek	√						√			√									
MSM8128KL	128k x 8 SRAM	Mostek	√						√			√									
MHS65162	2k x 8 SRAM	Matra	√						√			√									
HM65641	8k x 8 SRAM	Matra	√						√			√									
HM65656	32k x 8 SRAM	Matra	√						√												
MHS65654	8k x 8 SRAM	Matra	√						√			√									
HM65664	8k x 8 SRAM	Matra	√						√			√									
D431000	128k x 8 SRAM	Nippon Electric Corporation	√						√												
D43256	32k x 8 SRAM	Nippon Electric Corporation	√						√												
UPD43256A	32k x 8 SRAM	Nippon Electric Corporation	√						√			√									
CXK581000	128k x 8 SRAM	Sony	√						√												
CXK581000P-10LL	128k x 8 SRAM	Sony	√						√			√									
CXK581001	128k x 8 SRAM	Sony	√						√												
CXK58257	32k x 8 SRAM	Sony	√						√												
SMJ44C251	256k x 4 SRAM	Texsas Instruments	√						√			√									
IMS16-1EPI	64k x 1 SRAM	SGS Thomson	√						√			√									
UT67164	8k x 8 SRAM	UTMC	√						√			√									
MB8116400-60PJ	4M x 4 DRAM	Fujitsu	√						√			√									
01G9274	1M x 4 DRAM	IBM	√						√			√									

		LUNA-C DD3	4M x 4 DRAM	IBM	√						√			√									
		LUNA-C	4M x 4 DRAM	IBM	√						√			√									
		LUNA-E	4M x 4 DRAM	IBM	√						√			√									
		MT4C4001JC	1M x 4 DRAM	Micron Technologies	√						√			√									
		MT4C4001	1M x 4 DRAM	Micron Technologies	√						√			√									
		MT4CM481DW	4M x 4 DRAM	Micron Technologies	√						√												
			4M DRAM	Oki Semiconductor	√									√									
		KM44C4000AJ-7	4M x 4 DRAM	Samsung	√						√			√									
		SMJ27C128-25	16k x 8 DRAM	Texsas Instruments	√						√												
		44400	1M x 4 DRAM	Texsas Instruments	√						√			√									
		SMJ44100	4M x 1 DRAM	Texsas Instruments	√						√			√									
2, pp. 14-21	K. LaBel	0116400J1D Luna-ES	4M x 4 DRAM	IBM	√						√			√									
		KM48V8100AS-16	8M x 8 DRAM	Samsung	√						√												
		UPD4216400-60	4M x 4 DRAM	NEC	√						√												
		TMS416400DJ-60	4M x 4 DRAM	Texsas Instruments	√						√			√									
		88130L45PC	128k x 8 SRAM	Hitachi	√						√												
		MT5C1008CW-25	128k x 8 SRAM	Micron	√						√												
		CLAY-31	FPGA	National Semiconductor	√						√			√									
		A14100A	FPGA	Actel	√						√			√									
		A1460A	FPGA	Actel	√						√			√									
		UT63M147-BPC	1553 Transceiver	UTMC	√						√			√									
		DR1773	1773 Transceiver	Boeing	√						√												
		2706T	Fiber Channel LinkTransmitter	Force Inc.	√						√												
		2706R	Fiber Channel Link Receiver	Force Inc.	√						√												
		ATTDA204B	Fiber Channel Link Transmitter	AT&T	√						√												
		ATTDA205B	Fiber Channel Link Receiver	AT&T	√						√												
		AM7968	TAXI Transmitter	Advanced Micro Devices	√						√			√									
		AM7969	TAXI Receiver	Advanced Micro Devices	√						√			√									
		5690R-D15	DC-DC Converter	Modular Device Inc.	√						√				√	√							
		M67204EV-50	4k x 9 FIFO	Matra	√						√			√									
		CS5012A	12 bit ADC	Crystal Semiciductor	√						√			√									
		AD570	8 bit ADC	Analog Devices	√						√			√									
		DAC8800	8 bit DAC	Analog Devices	√						√			√									
		AD630	Balanced Modulator	Analog Devices	√						√			√									
		AD652	Voltage to Frequency Converter	Analog Devices	√						√			√									
		LM136	Voltage Reference	National Semiconductor	√						√			√									
		TI7770-5	Power Supervisor	Texsas Instruments	√						√			√									
		TI7705	Power Supervisor	Texsas Instruments	√						√			√									
3, pp. 22-27	P. Layton	1020A	FPGA	Actel	√		√																
		1280A	FPGA	Actel	√		√																
		22V10	PLD	Cypress	√		√																
		28C010T	1 M bit EEPROM	Hitachi	√		√																
		80386	Microprocessor	Intel	√		√																
		82380	DMA Controller	Intel	√		√																
		82389	Message Passing Coprocessor	Intel	√		√																
		14C0164	4M x 4 DRAM	Hitachi	√						√			√									
		7809L	16 bit ADC	Burr-Brown	√						√			√									
		10009L	FPGA	Gatefield	√									√									
		Prototype	ASIC Process	Space Electronics Inc.	√						√			√									
4, pp. 28-34	M. Simons		Irradiation Source Characterization																		√		
5, pp. 35-40	G. Hash	PDM41256LA	32k x 8 SRAM	Paradigm Corporation	√		√				√			√			√						
		PDM31256	SRAM	Paradigm Corporation	√		√				√			√			√						
		CY7C1399	32k x 8 SRAM	Cypress Semiconductor	√		√				√			√			√						
		LOR1M8C1399	128k x 8 SRAM	LMFS	√		√				√			√			√						
6, pp. 41-43	A. Nikiforov		Thin Film Thermo-Resistors		√		√													√			
7, pp. 44-47	A. Nikiforov	RE11	8k x 8 ROM		√						√												
		RE2	32k x 8 ROM		√						√												
		RE3	8k x 8 ROM		√						√												
8, pp. 48-52	C. Kouba	486-DX4	Microprocessor	Intel	√						√												
		486-DX4	Microprocessor	Advanced Micro Devices	√						√												
9, pp. 53-60	R. Hosken	MT5C2568	32k x 8 SRAM	Micron		√					√												
10, pp. 61-66	D. Thouvenot	KM684000LG-5L	512k x 8 SRAM	Samsung	√						√												
		MMC9656O8V-45	128k x 8 SRAM	MHS	√						√												
		KM681000BLP-7P	128k x 8 SRAM	Samsung	√						√												
		HM628512BLFP-I-70	512k X 8 SRAM	Hitachi	√						√												
		M5M5408FP-55-L	512k x 8 SRAM	Mitsubishi	√						√												
11, pp. 67-72	N. Kerness	No part numbers	SRAM, DRAM Neutron Data		√						√												
12, pp. 73-79	S. Penzin	UC1825A	Pulse Width Modulator	Unitrode	√						√												
		UC1856	Pulse Width Modulator	Unitrode	√						√												
		UCC1806	Pulse Width Modulator	Unitrode	√						√			√									
		UC1825A	Pulse Width Modulator	Unitrode	√						√												
		UC1823	Pulse Width Modulator	Unitrode	√						√												
13, pp. 80-83	D. Hiemstra	OPA37	Operational Amplifier	Burr-Brown	√		√																
14, pp. 84-89	R. Pease	MAX338CPE	Analog Multiplexer	Maxim	√		√																
		MAX358CPE	Analog Multiplexer	Maxim	√		√																
15, pp. 90-96	A. Sharma	IBM0116400AJ3	16M bit DRAM	IBM/LMFS	√		√																
		Q02L00JQ	16M bit DRAM	IBN/LMFS	√		√																
		P44016JK	16M bit DRAM	IBM/LMFS	√		√																
		TMS416400	16M bit DRAM	Texsas Instruments	√		√																
		KM48C8100AS-6	64M bit DRAM	Samsung	√		√																
		KM48V8100AS-6	64M bit DRAM	Samsung	√		√																
		AM29F016	16M bit Flash EEPROM	Advanced Micro Devices	√		√																
		28C010	1M bit EEPROM	Hitachi/Space Electronics Inc.	√		√																
		58C1001	1M bit EEPROM	Hitachi/Austin	√		√																
		MT5C1008	1M bit SRAM	Micron	√		√																
16, pp. 97-100	C. Lee	KM48V8004A	8M x 8 DRAM	Samsung	√		√																
		M5M467800AJ-6	64M bit DRAM	Mitsubishi	√		√																
17, pp. 101-104	J. Benedetto	Test Structure	PROM Antifuse	UTMC	√		√																
18, pp. 105-109	J. Benedetto		Radiation Tolerant Modules	UTMC	√		√																
19, pp. 110-115	G. Brown	RH32	Microprocessor	Honeywell	√						√			√			√						
		RH32	Floating Point Unit	Honeywell	√						√			√			√						
		RH32	Cache Memory	Honeywell	√						√			√			√						
20, pp. 116-121	J. Spratt	Custom	1024 x 640 Charge Coupled Device		√		√												√				
21, pp. 122-124	M. D'Ordine	4N49	Optocoupler	Micropac	√														√				
		OMT1062	Optocoupler	Optek	√														√				

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Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose				Single Event Effects							Displacement Damage		Facilities	Standard	Environment
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			
5, pp. 1-5	D. Hiemstra	OPA111	Operational Amplifier	Burr-Brown	√		√															
15, pp. 6-12	T. Turflinger	AD9220	12 bit ADC	Analog Devices	√		√															
		AD7874	12 bit ADC	Analog Devices	√		√										√					
14, pp. 13-18	A. Sharma	28C256	EEPROM	SEEQ	√		√															
		28C010	EEPROM	Hitachi/Space Electronics Inc.	√		√															
		58C1001	EEPROM	Hitachi/Austin	√		√															
		OP490	Operational Amplifier	Precision Monolithics Inc.	√			√														
		OP07A	Operational Amplifier	Precision Monolithics Inc.	√			√														
		OP43	Operational Amplifier	Analog Devices	√			√														
		OP07A	Operational Amplifier	Precision Monolithics Inc.	√			√														
		OP400AY	Operational Amplifier	Precision Monolithics Inc.	√			√														
		LM108A	Operational Amplifier	National Semiconductor	√			√														
		LM108	Operational Amplifier	National Semiconductor	√			√														
		LM108	Operational Amplifier	National Semiconductor	√			√														
		EL2243C	Operational Amplifier	Elantec	√			√														
		LF411MH	Operational Amplifier	National Semiconductor	√			√														
		LM10	Operational Amplifier	Linear Technology	√			√														
		TL074	Operational Amplifier	Texsas Instruments	√			√														
		AD645SG	Operational Amplifier	Analog Devices	√			√														
		TLE2142	Operational Amplifier	Texsas Instruments	√			√														
		LM158	Operational Amplifier	National Semiconductor	√			√														
		PA10M	Operational Amplifier	Apex	√			√														
		HA7-5127	Operational Amplifier	Harris	√			√														
		AD829SQ	Operational Amplifier	Analog Devices	√			√														
		AD620SQ	Operational Amplifier	Analog Devices	√			√														
		OP27A	Operational Amplifier	Linear Technology	√			√														
		LM10	Operational Amplifier	National Semiconductor	√			√														
		26C31	Differntial Driver	National Semiconductor	√		√															
		OP177	Operational Amplifier	Analog Devices	√			√														
		PA51M	Operational Amplifier	Apex	√			√														
		ADC0816	8 bit ADC	National Semiconductor	√		√															
		RP7820	8 bit ADC	Space Electronics Inc.	√		√															
		AD7672	12 bit ADC	Analog Devices	√		√															
		MP7628	8 bit DAC	Micro Power Systems	√		√															
		AD7545	12 bit DAC	Analog Devices	√		√															
		DAC08A	8 bit DAC	Analog Devices	√			√														
		DAC8408A	8 bit DAC	Precision Monolithics Inc.	√		√															
		DAC08A	8 bit DAC	Analog Devices	√		√															
		AD565	12 bit DAC	Analog Devices	√			√														
		SP9380	18 bit DAC	Sipex	√		√															
		MFL2815S	DC-DC Converter	Interpoint	√		√															
		MFL2812S	DC-DC Converter	Interpoint	√		√															
		MFL2815	DC-DC Converter	Interpoint	√		√															
		MFL2805S	DC-DC Converter	Interpoint	√		√															
		MHF2812S	DC-DC Converter	Interpoint	√		√															
		MHF2805S	DC-DC Converter	Interpoint	√		√															
6, pp. 19-27	K. Label	HM5116400AJ7	4M x 4 DRAM	Hitachi	√						√											
		4216400-70	4M x 4 DRAM	NEC	√						√											
		D4216400G3-70	4M x 4 DRAM	NEC	√						√											
		0116400PT1C-70	4M x 4 DRAM	IBM	√						√											
		43G9240	4M x 4 DRAM	IBM	√						√											
		0116400J1C-70	4M x 4 DRAM	IBM	√						√											
		TP0116400AJ3B-70	4M x 4 DRAM	IBM	√						√											
		0116400J1C-70	160M bit DRAM	IBM	√						√											
		70V25	Dual Port RAM	IDT	√						√											
		628128	SRAM	Hitachi	√						√			√								
		SA28C256ARP	EEPROM	Space Electronics Inc.	√						√			√								
		SA28C256ERPDB	EEPROM	Space Electronics Inc.	√						√			√								
		HN58C1001	EEPROM	Hitachi	√						√			√								
		E28F016SB	Flash EEPROM	Intel	√						√			√								
		UT22VP10	PAL	UTMC	√						√			√								
		IMP50E10	EDAC	IMP	√						√			√								
		A1280	FPGA	Actel	√						√											
		AT6002-JC	FPGA	Atmel	√						√			√								
		3090A	FPGA	Xilinx	√						√			√								
		ATT2C04-2	FPGA	AT&T	√									√								
		MQ80386-25/B	Microprocessor	Intel	√						√			√								
		H30466A-21	Microprocessor	Space Electronics Inc.	√						√			√								
		MQ80387-20/B	Math Coprocessor	Intel	√						√			√								
		MQ82380-25B	Integrated Peripheral	Intel	√						√			√								
		M82C59A	Programmable Interupt Controller	Harris	√						√			√								
		D8255A-5	Programmable Peripheral Interface	Intel	√						√			√								
		82C54	Timer	Inte;	√						√			√								
		ICL7662MTV-4	Voltage Converter	Maxim	√						√			√								
		MCH2805S	DC-DC Converter	Interpoint	√										√	√						
		MDI2680	DC-DC Converter	Modular Devices Inc.	√										√							
		SP9380	18 bit DAC	Sipex	√						√			√								
		QS3384DM	QuickSwitch	Quality Semiconductor Inc.	√									√								
		CD4029	Counter	IM	√						√											
		HSSR-71110	Optocoupled Power MOSFET	Hewlett Packard	√						√			√								
		HX2300	Test Structure	Honeywell	√						√			√								
11, pp. 28-37	R. Pease																					
16, pp. 38-43	G. Youk	AD574	12 bit ADC	Analog Devices	√		√															
3, pp. 44-48	S. Dowling	BCW60AD	Bipolar Transistor		√		√															
		BC847	Bipolar Transistor		√		√															
10, pp. 49-54	A. Nikiforov		Portable Pulse Laser Simulator																		√	
7, pp. 55-61	D. Larsen	HT1104	Operational Amplifier	Honeywell	√		√										√					
		HT1204	Analog Switch	Honeywell	√		√										√					
8, pp. 62-66	S. Liu	Prototype	256k bit SRAM	Honeywell	√		√															
9, pp. 67-72	D. Nichols	IRF440	Power MOSFET	Motorola	√											√						
		EGC2392	Power MOSFET	Phillips	√										√	√						
		IXFM40N25RH	Power MOSFET	IXYS	√										√							
		IXTM35N30	Power MOSFET	IXYS	√										√							
		IXTM21N45	Power MOSFET	IXYS	√										√							

		IXFN21N45RH	Power MOSFET	IXYS	√									√									
		VN88F	Power MOSFET	Siliconix	√									√									
		IRFF130	Power MOSFET	Siliconix	√									√									
		2N6851	Power MOSFET	Siliconix	√									√									
		2N6794	Power MOSFET	Siliconix	√									√									
		2N6802	Power MOSFET	Siliconix	√									√	√								
		VP0610	MOSFET	Siliconix	√									√									
		IRHM7054	Power MOSFET	International Rectifier	√									√	√								
		IRF140	Power MOSFET	International Rectifier	√									√									
		IRF150	Power MOSFET	International Rectifier	√									√									
		IRHF7110	Power MOSFET	International Rectifier	√										√								
		IRF250	Power MOSFET	International Rectifier	√									√									
		IRFM250	Power MOSFET	International Rectifier	√									√									
		IR7250	Power MOSFET	International Rectifier	√										√								
		IRH9250	Power MOSFET	International Rectifier	√									√									
		IRF310	Power MOSFET	International Rectifier	√									√									
		IRF330	Power MOSFET	International Rectifier	√									√									
		IRFF330	Power MOSFET	International Rectifier	√									√									
		IRF340	Power MOSFET	International Rectifier	√									√									
		IRF350	Power MOSFET	International Rectifier	√									√									
		IRF360	Power MOSFET	International Rectifier	√									√									
		IR420	Power MOSFET	International Rectifier	√									√									
		IRF430	Power MOSFET	International Rectifier	√									√									
		IRFF430	Power MOSFET	International Rectifier	√									√									
		IRF440	Power MOSFET	International Rectifier	√									√									
		IRF450	Power MOSFET	International Rectifier	√									√									
		IRFM450	Power MOSFET	International Rectifier	√									√									
		IRH450	Power MOSFET	International Rectifier	√									√									
		IR7450	Power MOSFET	International Rectifier	√										√								
		IRHM7450	Power MOSFET	International Rectifier	√										√								
		IRH7450SE	Power MOSFET	International Rectifier	√										√								
		2N6782	Power MOSFET	Harris	√									√									
		IRF140	Power MOSFET	Harris	√										√								
		FRM140D1	Power MOSFET	Harris	√										√								
		FRM140	Power MOSFET	Harris	√										√								
		IRF150	Power MOSFET	Harris	√									√									
		FSF150R	Power MOSFET	Harris	√										√								
		FRK150R	Power MOSFET	Harris	√										√								
		FRF9250	Power MOSFET	Harris	√										√								
		FRM9250	Power MOSFET	Harris	√										√								
		FRL234R	Power MOSFET	Harris	√										√								
		FRM234	Power MOSFET	Harris	√										√								
		FSL234	Power MOSFET	Harris	√										√								
		TA17663	Power MOSFET	Harris	√									√									
		FSF245R	Power MOSFET	Harris	√										√								
		FSL254	Power MOSFET	Harris	√										√								
		TA17463RH	Power MOSFET	Harris	√									√									
		FRL430D	Power MOSFET	Harris	√										√								
		IRF440	Power MOSFET	Harris	√										√								
		TA17465	Power MOSFET	Harris	√									√									
		TA17665RH	Power MOSFET	Harris	√									√									
12, pp. 73-77	C. Poivey	DP83932CVF	Network Interface Controller	National Semiconductor	√						√		√										
		DP83956AVLJ	Repeater Interface Controller	National Semiconductor	√						√		√										
		DP83950BVQB	Repeater Interface Controller	National Semiconductor	√						√		√										
		DP8392CV	Coaxial Trnsceiver Interface	National Semiconductor	√						√		√										
		AM79C98	Twisted Pair Transceiver	Advanced Micro Devices	√						√		√										
2, pp. 78-83	G. Berger		CYCLONE ion beam properties																		√		
14, pp. 84-87	C. Foster		IUCF proton beam properties																		√		
1, pp. 88-93	C. Barillot		MESFET HAV Process	Triquint	√									√									
			MESFET F20 Process	GEC-Marconi	√									√									
			Heterojunction FET Process	Texsas Instruments	√									√									
			p-HEMT MMC046A Process	Raytheon	√									√									
13, pp. 94-102	K. Ray		Various Solar Cells			√												√					

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Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose				Single Event Effects							Displacement Damage		Facilities	Standard	Environment
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			
10, pp. 1-11	D. Nichols	80C286	Microprocessor	Harris	√						√			√							√	
		7C801	Microprocessor	Cypress Semiconductor	√									√								
		R3000A	Microprocessor	Integrated Device Technologies	√						√			√								
		80960MX	Microprocessor	Intel	√									√								
		L64811	Microprocessor	LSI Logic	√						√			√								
		L64730	Microprocessor	LSI Logic	√									√								
		Mongoose R3000	Microprocessor	LSI Logic	√						√			√								
		R3000A	Microprocessor	LSI Logic	√						√			√								
		R33000HC	Microprocessor	LSI Logic	√						√			√								
		90C801	Microprocessor	Matra	√						√			√								
		PR3400	Microprocessor	Performance Semicinductor	√						√			√								
		PR3400A	Microprocessor	Performance Semicinductor	√						√			√								
		887020	Microprocessor	Thomson Military & Space	√						√			√								
		Alpha	Microprocessor	Digital Equipment Corporation	√									√								
		AM65C30	Controller	Advanced Micro Devices	√									√								
		AMAS2901	Controller	General Electric	√						√			√								
		82C527	CAN Microcontroller	Intel	√						√			√								
		87C51FB	Microprocessor	Intel	√						√			√								
		87C51FC	Microprocessor	Intel	√						√			√								
		RH80C51FC	Microprocessor	UTMC	√						√			√								
		68HCS705	Microprocessor	Motorola	√									√								
		87C552	Microprocessor	Signetics	√									√								
		82380	DMA Controller	Intel	√						√			√								
		53C90	SCSI Controller	National Cash Register	√						√			√								
		SM320E15	Digital Signal Processor	Texas Instruments	√									√								
		SMJ27C128-25	16K x 8 EEPROM	Texas Instruments	√									√								
		320C30	Digital Signal Processor	Texas Instruments	√						√			√								
		TMS320C50	Digital Signal Processor	Texas Instruments	√						√			√								
		7C802	Coprocessor	Cypress Semiconductor	√									√								
		7C804	Coprocessor	Cypress Semiconductor	√									√								
		L64801	Integer Unit	LSI Logic	√						√			√								
		L64804	Floating Point Unit	LSI Logic	√						√			√								
		L64814	Floating Point Unit	LSI Logic	√						√			√								
		90C602	Coprocessor	Matra	√						√			√								
		74FTC163374PV	Register	Integrated Device Technologies	√						√			√								
		F100331	D type Flip Flop	National Semiconductor	√						√			√								
		F100336	Counter/Shift Register	National Semiconductor	√						√			√								
		TLC555	Timer	Texas Instruments	√									√								
		HS506RH	Analog Multiplexer	Harris	√									√								
		54ACTQ245	Transceiver	National Semiconductor	√									√								
		CY7C249-30DM	FIFO	Cypress Semiconductor	√						√			√								
		72017	512 x 9 FIFIO	Integrated Device Technologies	√						√			√								
		7203L40D8	2K x 9 FIFO	Integrated Device Technologies	√						√			√								
		7203ERP	2K x 9 FIFO	Integrated Device Technologies	√						√			√								
		7204	4K x 9 FIFIO	Integrated Device Technologies	√						√			√								
		CY7C199	SRAM	Cypress Semiconductor	√						√			√								
		HM1-65162-2	SRAM	Harris	√						√			√								
		HC6364	SRAM	Honeywell	√						√			√								
		HC6856	SRAM	Honeywell	√						√			√								
		TMS416400 Rev. B	DRAM	Texas Instruments	√						√			√								
		SMJ416400	DRAM	Texas Instruments	√						√			√								
		TCS117400FT-70	DRAM	Toshiba	√						√			√								
		TC117400J-6	DRAM	Toshiba	√						√			√								
		R29791	PROM	Raytheon	√						√			√								
		HS6654RH	PROM	Harris	√						√			√								
		28C256	EEPROM	Atmel	√						√			√								
		HN58C56P-25	EEPROM	Hitachi	√						√			√								
		HN58C256P-20	EEPROM	Hitachi	√						√			√								
		DPZ128X16AJ	Flash Memory	Hitachi	√						√			√								
		MEM8129	EEPROM	Hitachi	√						√			√								
		HN58C1001	EEPROM	Hitachi	√						√			√								
		FM1208S	EEPROM	Ramtron	√						√			√								
		KM29C010	EEPROM	Samsung	√						√			√								
		28C256	EEPROM	SEEQ Technology Inc	√						√			√								
		28C256A	EEPROM	SEEQ Technology Inc	√						√			√								
		28C256E	EEPROM	SEEQ Technology Inc	√						√			√								
		28C256-200	EEPROM	SEEQ Technology Inc	√						√			√								
		57C538-5001	EEPROM	SEEQ Technology Inc	√						√			√								
		28C010	EEPROM	SEEQ Technology Inc	√						√			√								
		CQ28C010	EEPROM	SEEQ Technology Inc	√									√								
		WE-512K8-150CX	EEPROM	SEEQ Technology Inc	√									√								
		SA3823	EEPROM	Westinghouse	√						√			√								
		5SC85	EEPROM	SEEQ Technology Inc	√						√			√								
		27C210	UVEPROM	Intel	√						√			√								
		1020	FPGA	Actel	√						√			√								
		A1020A	FPGA	Actel	√						√			√								
		A1020B	FPGA	Actel	√						√			√								
		A1280	FPGA	Actel	√						√			√								
		A1280A	FPGA	Actel	√						√			√								
		7258GC192-1	FPGA	Actel	√						√			√								
		CP20420	FPGA	Crosspoint	√						√			√								
		3020	FPGA	Harris	√						√			√								
		3090	FPGA	Harris	√						√			√								
		HR1080	Gate Array	Honeywell	√						√			√								
		HR2340	Gate Array	Honeywell	√						√			√								
		LCA200K	ASIC Process	LSI Logic	√						√			√								
		LCA100380	Process	LSI Logic	√						√			√								
		TPC1020	FPGA	Texas Instruments	√						√			√								
		UTER50K	Gate Array	UTMC	√						√			√								
		UTER75K	Gate Array	UTMC	√						√			√								
		RHCMOS2	Gate Array	IBM	√						√			√								
		BTVCMOS2	Gate Array	IBM	√						√			√								
		PAL16R8BBMJ/883B	Programmable Logic Array	Advanced Micro Devices	√						√			√								
		AT22V10	Programmable Logic Array	Atmel	√						√			√								
		TIBPAL22V10	Programmable Logic Array	Texas Instruments	√						√			√								
		22V10	Programmable Logic Array	Texas Instruments	√						√			√								
		16L8	Programmable Logic Array	Texas Instruments	√						√			√								
		TIBPAL16R8	Programmable Logic Array	Texas Instruments	√						√			√								
		EP610	Programmable Logic Device	Alterra	√									√								
		EP1810	Programmable Logic Device	Alterra	√						√			√								
		EPM5032	Programmable Logic Device	Alterra	√						√			√								
		CY-7C344	Programmable Logic Device	Cypress Semiconductor	√						√			√								
		1XD3-0701	RS Encoder	UTMC	√						√			√								
		ACS/IOU	1553 Interfcae	UTMC	√						√			√								
		IDT49C450	EDAC Controller	Integrated Device Technologies	√						√			√								
		Hot Rod Tx	Transceiver	Gazelle	√						√			√								
		Hot Rod Rx	Receiver	Gazelle	√						√			√								
		TAXI	Transceiver	Advanced Micro Devices	√									√								
		AX3411	1553B Transceiver	Aeroflex Labs	√						√			√								
		AX3453	1553B Transceiver	Aeroflex Labs	√						√			√								
		DDC63125	1553B Transceiver	Data Devices Corporation	√						√			√								
		74FTC163245PV	Transceiver	Integrated Device Technologies	√						√			√								
		LTC485	RS485 Transceiver	Linear Technology	√									√								
		CT1487D	1553B Transceiver	Marconi Electroinic Devices	√						√			√								
		CT2521	1553B Transceiver	Marconi Electroinic Devices	√						√			√								
		NH1500	1553B Transceiver	National Semiconductor	√						√			√								
		NH1529	1553B Transceiver	National Semiconductor	√						√			√								
		FC1553821	1553B Transceiver	Silicon Transistor Corporation	√						√			√								
		UTMC63M125	1553B Transceiver	UTMC	√						√			√								
		UT63M125	1553B Transceiver	UTMC	√						√			√								
		M63147	1553B Transceiver	UTMC	√						√			√								
		AD8001	Operational Amplifier	Analog Devices	√						√			√								
		HS3530RH	Operational Amplifier	Harris	√						√			√								
		LM108	Operational Amplifier	Motorola	√						√			√								
		LM108	Operational Amplifier	National Semiconductor	√						√											
		LM124	Operational Amplifier	National Semiconductor	√									√								

		LM158	Operational Amplifier	National Semiconductor	√									√								
		LM218H	Operational Amplifier	National Semiconductor	√									√								
		LM108AH	Operational Amplifier	National Semiconductor	√						√			√								
		OP05	Operational Amplifier	Precision Monolithics	√						√			√								
		OP07AJ	Operational Amplifier	Precision Monolithics	√						√			√								
		OP15	Operational Amplifier	Precision Monolithics	√						√			√								
		OP97	Operational Amplifier	Precision Monolithics	√									√								
		SMP11	Operational Amplifier	Precision Monolithics	√									√								
		EL2243	Operational Amplifier	Elantec	√						√			√								
		PA10	Power Operational Amplifier	APEX	√									√								
		AD524	Operational Amplifier	Analog Devices	√						√			√								
		LM120H-12/883C	Voltage Regulator	National Semiconductor	√									√								
		LM117H	Voltage Regulator	National Semiconductor	√									√								
		LM136AH	Voltage Regulator	National Semiconductor	√									√								
		LP2951	Voltage Regulator	National Semiconductor	√						√			√								
		REF02-373J	Volatge Reference	National Semiconductor	√									√								
		SE5521F	Signal Conditioner	Signetics	√									√								
		LM111	Voltage Comparator	Motorola	√						√			√								
		LM111H	Voltage Comparator	National Semiconductor	√						√			√								
		LM119	Voltage Comparator	National Semiconductor	√									√								
		LM193H	Voltage Comparator	National Semiconductor	√									√								
		LM139	Voltage Comparator	National Semiconductor	√									√								
		LM139A	Voltage Comparator	National Semiconductor	√									√								
		IDAQ7318	Laser Driver	Hewlett Packard	√						√			√								
		88C20	Differntial Receiver	National Semiconductor	√						√			√								
		88C30	Differential Driver	National Semiconductor	√						√			√								
		TSC4429	Differential Driver	MOSFET Driver	√									√								
		D469A	Power Driver	Power Driver	√									√								
		MIC4420	Driver	Power Driver	√									√								
		HS26C31	Differential Driver	Harris	√						√			√								
		HS2632	Differntial Receiver	Harris	√						√			√								
		26C31	Differential Driver	National Semiconductor	√									√								
		26C32	Differntial Receiver	National Semiconductor	√									√								
		DG201	Analog Switch	Harris	√									√								
		DG201	Analog Switch	Siliconix	√									√								
		DG507AAK/883	Analog Switch	Siliconix	√									√								
		CA3338AD	8 bit DAC	Harris	√						√			√								
		DAC08AQ	8 bit DAC	Precision Monolithics	√						√			√								
		AD565	8 bit DAC	Analog Devices	√									√								
		AD7545AKN	8 bit DAC	Analog Devices	√						√			√								
		HAR7574KN	8 bit DAC	Harris	√									√								
		MX7545TQ	8 bit DAC	Maxim	√						√			√								
		MP7545TD/883	8 bit DAC	Micro Power Systems	√						√			√								
		MP7645TD/883	8 bit DAC	Micro Power Systems	√						√			√								
		7820RP/372	8 bit ADC	Micro Power Systems	√									√								
		TDC1048	8 bit ADC	TRW	√						√			√								
		AD9048	8 bit ADC	Analog Devices	√						√			√								
		HS9008RH	8 bit ADC	Harris	√						√			√								
		AD1671JD	12 bit ADC	Analog Devices	√									√								
		AD7541ATQ/883B	12 bit ADC	Analog Devices	√									√								
		AD7870	12 bit ADC	Analog Devices	√									√								
		AD7878	12 bit ADC	Analog Devices	√						√			√								
		AD42961	12 bit ADC	Analog Devices	√						√			√								
		RBC-12	12 bit ADC	Analog Devices	√						√			√								
		HI574	12 bit ADC	Harris	√						√			√								
		SPT7922	12 bit ADC	Signal Processing	√						√			√								
		HS5212	12 bit ADC	Sipex	√						√			√								
		HS5214	12 bit ADC	Sipex	√						√			√								
		SP574AU/B	12 bit ADC	Sipex	√									√								
		AD6768D	16 bit ADC	Analog Devices	√						√			√								
		AD677	16 bit ADC	Analog Devices	√						√			√								
		ADS7805	16 bit ADC	Analog Devices	√									√								
		CS5327	16 bit ADC	Crystal Semiconductor	√						√			√								
		MAX195	16 bit ADC	Maxim	√									√								
		HS9576RH	16 bit ADC	Sipex	√						√			√								
		ART2815T	DC-DC converter	Advanced Analog	√						√			√								
		ATW28XX	DC-DC converter	Advanced Analog	√									√								
		MFL2815D	DC-DC converter	Interpoint	√						√			√								
		MFL2815S	DC-DC converter	Interpoint	√						√			√								
		MFL2812S	DC-DC converter	Interpoint	√						√			√								
		MFL2805S	DC-DC converter	Interpoint	√						√			√								
		2690R-D15F	DC-DC converter	Modular Devices Inc.	√						√			√								
		AHE2815DF/CH-5LV	DC-DC converter	Advanced Analog	√						√			√								
		AHE2815D/HB	DC-DC converter	Advanced Analog	√						√			√								
		SP6908	Phase Locked Loop	General Electric	√						√											
		MC145148P2	Phase Locked Loop	Motorola	√						√			√								
		WD3392A	SCSI Controller	Western Digital Corporation	√						√			√								
		ADS10C100J100	Controller	Western Digital Corporation	√						√			√								
		SSP21110-025	Solid State Power Controller	Data Devices Corporation	√									√								
		HS2420	Sample and Hold	Harris	√						√			√								
		DON688	Silicon Controlled Rectifier	Solid State Device	√						√			√								
		D1777A	Silicon Controlled Rectifier	Solid State Device	√						√			√								
		EMXO	Oscillator	Bal Efatrom	√						√			√								
		HFD3801-002	Fiber Optic Receiver	Honeywell	√						√											
		HFE4811-013	Fiber Optic Transmitter	Honeywell	√						√											
		ODL200TX	Fiber Optic Receiver	AT&T	√						√			√								
		ODL200REC	Fiber Optic Transmitter	AT&T	√						√			√								
		9407	Register	Fairchild Semiconductor	√																	
		9407	Register	Fairchild Semiconductor	√																	
		L29C520	Register	Linear Technology	√									√								
		LTC1064	Low Pass Filter	Linear Technology	√									√								
		SQR5053	Code	SOREP	√									√								
		AD2S80	Resolver to Digital Converter	Analog Devices	√						√			√								
		HSRD1056	Resolver to Digital Converter	Natel	√						√			√								
8, pp. 12-32	K. LaBel	A1280A	FPFA	Actel	√									√							√	
		HN58C1001	EEPROM	Hitachi	√									√								
		28C256	EEPROM	SEEQ	√									√								
		AD524	Instrumentation Amplifier	Analog Devices	√							√		√								
		AD565	DAC	Analog Devices	√						√			√								
		HS5212	12 bit ADC	Hybrid Systems	√						√			√								
		7820RP/372	ADC	Space Electronics Inc.	√									√								
		DAC08AQ	8 bit DAC	Precision Monolithics	√						√			√								
		SSP21110-025	Power Controller	Data Devices Corporation	√						√			√								
		2690R-D15F	DC-DC converter	Modular Devices Inc.	√						√			√								
		AHE2815	DC-DC converter	Advanced Analog	√						√											
		MFL2805S	DC-DC converter	Interpoint	√						√			√								
		MFL2812S	DC-DC converter	Interpoint	√						√			√								
		MFL2815D	DC-DC converter	Interpoint	√						√			√								
		MFL2815S	DC-DC converter	Interpoint	√						√			√								
		LM119	Voltage Comparator	National Semiconductor	√									√								
		LM139A	Voltage Comparator	National Semiconductor	√									√								
		LM139	Voltage Comparator	National Semiconductor	√									√								
		LM108AH	Operational Amplifier	Precision Monolithics	√							√		√								
		LM124	Operational Amplifier	National Semiconductor	√									√								
		LM158	Operational Amplifier	National Semiconductor	√									√								
		OP07AJ	Operational Amplifier	Precision Monolithics	√							√		√								
		OP97	Operational Amplifier	Precision Monolithics	√									√								
		PA10	Operational Amplifier	Apex	√									√								
		SMP11	Operational Amplifier	Precision Monolithics	√									√								
		SE5521F	Signal Conditioner	SGN	√									√								
		LM117H	Voltage Regulator	National Semiconductor	√									√								
		LM120H	Voltage Regulator	National Semiconductor	√									√								
		LM136AH	Voltage Regulator	National Semiconductor	√									√								
		LP2951	Voltage Regulator	National Semiconductor	√									√								
		REF-02-373J	Voltage Reference	Precision Monolithics	√									√								
		8116400-60PJ	16 Mbit DRAM	Fujitsu	√									√								
		HM5117400RR7	16 Mbit DRAM	Hitachi	√						√			√								
		KM44C4000	16 Mbit DRAM	Samsung	√						√			√								
		MCM516400J60	16 Mbit DRAM	Motorola	√						√											
		MCM517400J60	16 Mbit DRAM	Motorola	√						√											
		MT4CM4B1DW	16 Mbit DRAM	Micron	√						√			√								
		TC5117400FT-70	16 Mbit DRAM	Toshiba	√						√			√								
		70324	Dual Port RAM	IDT	√									√								
		70V25	Dual Port SRAM	IDT	√						√			√								
		7201T	9x512 FIFO	IDT	√						√			√								
		7203ERP	9 x 2048 bit FIFO	IDT	√						√			√								
		7203L40DB	9 x 2048 bit FIFO	IDT	√						√			√								
		7204	9 x 4096 bit FIFO	IDT	√						√			√								
		80386-20	Microprocessor	Intel	√						√			√								
		80386DX-25	Microprocessor	Intel	√									√								
		82380-20/B	Integrated Peripheral	Intel	√						√			√								
		82380-16	Integrated Peripheral	Intel	√									√								
		80387	Microprocessor	Intel	√						√			√								
		80486DX-33	Microprocessor	Intel	√						√			√								
		80486DX2-66	Microprocessor	Intel	√						√			√								
		49C460	EDAC Controller	IDT	√						√			√								
		74FCT163374	16 bit Register	IDT	√						√			√								
		74FCT163245	16 bit Transceiver	IDT	√						√			√								
		HR2340	Test Metal	Honeywell	√						√			√								
		MIC4427	MOSFET Driver	Micrel	√									√								
12, pp. 33-38	E. Normand		ARINC 429 Receiver, 3.3V	US2	√						√			√								
			ARINC 429 Receiver, 5.0V	US2	√						√			√								
			ARINC 429 Receiver, 5.0V	AMI	√									√								
		CGD3302	Gate Array	Fijitsu	√									√								
		LCA100K	Gate Array	LSI Logic	√									√								
		LCA200K	Gate Array	LSI Logic	√									√								
4, pp. 39-41	S. Buchner	GAPDETECT	Custom		√						√											
7, pp.42-49	R. Harboe-Sorensen	8116100-60JP	16 Mbit DRAM	Fujitsu	√		√				√											
		HM5116100Z8	16 Mbit DRAM	Hitachi	√		√				√											
		HM5116600Z8	16 Mbit DRAM	Hitachi	√		√				√											
		HM5116400AS6	16 Mbit DRAM	Hitachi	√		√				√											
		IBM401070804	16 Mbit DRAM	IBM	√		√				√											
		63F9221	16 Mbit DRAM	IBM	√		√				√											
		MT4C4M4B1DW	16 Mbit DRAM	Micron	√		√				√			√								
		MT4C40004	16 Mbit DRAM	Micron	√		√				√			√								
		D4216100V-70	16 Mbit DRAM	NEC	√		√				√											
		KM41C16000J-B	16 Mbit DRAM	Samsung	√		√				√											
		KM41C16000J-7	16 Mbit DRAM	Samsung	√		√				√											
		KM44C4000J-6	16 Mbit DRAM	Samsung	√		√				√											
		TMS416400A	16 Mbit DRAM	Texas Instruments	√		√				√			√								
		TC5116400J-60	16 Mbit DRAM	Toshiba	√		√				√											
		TC5116400 FT-60	16 Mbit DRAM	Toshiba	√		√				√											
17, pp. 50-54	M. Skipper	MIC4427	CCD Clock Driver	Micrel	√		√							√								
2, pp. 55-59	J. Bensoussan	UC1806	Pulse Width Modulator	Unitrode	√		√					√		√								
15, pp. 60-63	D. Shaw	80C186	Microprocessor	Intel	√		√															
		80C186	Microprocessor	Advanced Micro Devices	√		√															
14, pp. 64-70	M. Regula	1750	Microprocessor, PACE	Westinghouse	√		√															
		1753	Memory Management Unit	Westinghouse	√		√															
		1754	Processor Interface Controller	Westinghouse	√		√															
16, pp. 71-77	L. Silvermann	TL 431	Voltage Reference	Motorola	√		√															
		REF-43	Voltage Reference	Precision Monolithics	√		√															
		1N5404	Schottky Diode	Motorola	√		√															
		CLC404	Operational Amplifier	Comlinear	√		√															
		Custom	Logarithmic Amplifier	Rockwell International	√		√															
13, pp. 78-84	A. Pawlikiewicz	ACUTE	Complimentary Bipolar Process	UTMC	√		√															
12, pp. 85-89	T. Corbiere	MHS	0.85 µm CMOS process	Matra	√		√															
3, pp. 90-90	D. Brautigam		CRRES Electron Model																			√
6, pp. 91-92	G. Ginet		PL-GEOSpace Dynamic Model																			√
11, pp. 93-98	E. Nolting		Phoenix, X-ray facility																	√		
9, pp. 99-103	J. Miller		Casino, X-ray facility																	√		
1, pp. 104-106	H. Andrews		Chalk River, heavy ion facility																	√		

Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.

					Data	Total Ionizing Dose	Single Event Effects		Displacement Damage	Facilities	Standard	Environment

Paper No., Page No.	First Author	Part No.	Type	Manufacture	Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			
4, pp. 1-6	N. Haddad		1 Mbit SRAM	Loral Federal Systems	√		√				√			√			√					
6, pp. 7-10	T. Houston		1 Mbit SRAM	Texas Instruments	√		√				√			√			√					
3, pp. 11-14	G. Hash		4kbit SRAM	Sandia National Labs	√		√										√					
11 pp. 15-19	W. Newman	HS-65643RH	64 kbit SRAM	Harris Semiconductor	√		√															
		HS-65647RH	64 kbit SRAM	Harris Semiconductor	√		√															
14, pp. 20-25	C. Poivey	28C10	1 Mbit EEPROM	SEEQ	√						√			√								
			MEM8129	Hybrid Memory	√						√			√								
9, pp. 26-29	S. Mulford	80386DX	32 bit Microporocessor	Intel	√		√															
		80387DX	32 bit Math Coprocessor	Intel	√		√															
16, pp. 30-36	A. Sharma	MQ80386-20B	32 bit Microporocessor	Intel	√		√															
13, pp. 37-40	K. Ohsono		CMOS 177k Gate Array	NEC Corporation	√		√															
12, pp. 41-54	D. Nichols	20N60	N channel Power MOSFET	Ixys	√										√							
		10N100	N channel Power MOSFET	Isyx	√										√	√						
		APT40M42	N channel Power MOSFET	Advanced Power Technology	√										√							
		1001R1AN	N channel Power MOSFET	Advanced Power Technology	√										√	√						
		IRF150	N channel Power MOSFET	General Electric	√										√							
		IRF250	N channel Power MOSFET	General Electric	√										√							
		IRFF320	N channel Power MOSFET	Unitrode	√										√							
		2N6660	N channel Power MOSFET	Siliconix	√										√							
		IRFF130	N channel Power MOSFET	Siliconix	√										√							
		IRF150	N channel Power MOSFET	Siliconix	√										√							
		IRF250	N channel Power MOSFET	Siliconix	√										√							
		IRFF230	N channel Power MOSFET	Siliconix	√											√						
		IRF350	N channel Power MOSFET	Siliconix	√										√							
		2N6802	N channel Power MOSFET	Siliconix	√										√							
		18N10	N channel Power MOSFET	Radio Corporation of America	√										√							
		IRF150	N channel Power MOSFET	Radio Corporation of America	√										√							
		12P10	P channel Power MOSFET	Radio Corporation of America	√										√							
		IRF9130	P channel Power MOSFET	Radio Corporation of America	√										√							
		30N15	N channel Power MOSFET	Radio Corporation of America	√										√							
		RFM12N18	N channel Power MOSFET	Radio Corporation of America	√										√							
		IRF230	N channel Power MOSFET	Radio Corporation of America	√										√							
		IRFF230	N channel Power MOSFET	Radio Corporation of America	√										√							
		IRF250	N channel Power MOSFET	Radio Corporation of America	√										√							
		25N20	N channel Power MOSFET	Radio Corporation of America	√										√							
		IRFM054	N channel Power MOSFET	International Rectifier	√										√							
		IRHM7054	N channel Power MOSFET	International Rectifier	√										√							
		IRF110	N channel Power MOSFET	International Rectifier	√										√							
		IRFF110	N channel Power MOSFET	International Rectifier	√										√							
		IRF120	N channel Power MOSFET	International Rectifier	√										√	√						
		IRFF120	N channel Power MOSFET	International Rectifier	√										√							
		IRH130	N channel Power MOSFET	International Rectifier	√											√						
		IRHF130	N channel Power MOSFET	International Rectifier	√											√						
		IRF130	N channel Power MOSFET	International Rectifier	√										√							
		IRFF130	N channel Power MOSFET	International Rectifier	√										√	√						
		IRF140	N channel Power MOSFET	International Rectifier	√										√							
		IRF150	N channel Power MOSFET	International Rectifier	√										√							
		IRH150	N channel Power MOSFET	International Rectifier	√										√							
		IRHF7110	N channel Power MOSFET	International Rectifier	√											√						
		IRHF7130	N channel Power MOSFET	International Rectifier	√											√						
		IRH7150	N channel Power MOSFET	International Rectifier	√										√	√						
		IRFG6110	N channel Power MOSFET	International Rectifier	√										√							
		2N6845	P channel Power MOSFET	International Rectifier	√											√						
		IRFF9122	P channel Power MOSFET	International Rectifier	√										√							
		2N6804	P channel Power MOSFET	International Rectifier	√											√						
		IRHF9130	P channel Power MOSFET	International Rectifier	√											√						
		IRF9140	P channel Power MOSFET	International Rectifier	√											√						
		IRF9150	P channel Power MOSFET	International Rectifier	√											√						
		IRH9150	P channel Power MOSFET	International Rectifier	√											√						
		IRF210	N channel Power MOSFET	International Rectifier	√										√							
		IRF220	N channel Power MOSFET	International Rectifier	√										√							
		IRFF220	N channel Power MOSFET	International Rectifier	√										√							
		IRF230	N channel Power MOSFET	International Rectifier	√										√							
		IRFF230	N channel Power MOSFET	International Rectifier	√										√							
		IRF240	N channel Power MOSFET	International Rectifier	√										√							
		IRFF230	N channel Power MOSFET	International Rectifier	√										√							
		IRFF230	N channel Power MOSFET	International Rectifier	√										√							
		IRF240	N channel Power MOSFET	International Rectifier	√										√							
		IRF250	N channel Power MOSFET	International Rectifier	√										√							
		IRH7230	N channel Power MOSFET	International Rectifier	√											√						
		IRH7250	N channel Power MOSFET	International Rectifier	√											√						
		IRHM7250	N channel Power MOSFET	International Rectifier	√											√						
		IRHM8250	N channel Power MOSFET	International Rectifier	√											√						
		2N6851	P channel Power MOSFET	International Rectifier	√											√						
		IRF9230	P channel Power MOSFET	International Rectifier	√											√						
		IRFF9230	P channel Power MOSFET	International Rectifier	√											√						
		IRF9240	P channel Power MOSFET	International Rectifier	√											√						
		IRH254	N channel Power MOSFET	International Rectifier	√										√							
		IRF310	N channel Power MOSFET	International Rectifier	√										√							
		IRFF320	N channel Power MOSFET	International Rectifier	√										√							
		IRF330	N channel Power MOSFET	International Rectifier	√										√							
		IRFF330	N channel Power MOSFET	International Rectifier	√										√							
		IRF340	N channel Power MOSFET	International Rectifier	√										√							
		IRF350	N channel Power MOSFET	International Rectifier	√										√							
		IRH7360	N channel Power MOSFET	International Rectifier	√										√							
		IRHM7360	N channel Power MOSFET	International Rectifier	√											√						
		IRF360	N channel Power MOSFET	International Rectifier	√											√						
		IR420	N channel Power MOSFET	International Rectifier	√										√							
		IRF430	N channel Power MOSFET	International Rectifier	√										√							
		IRFF430	N channel Power MOSFET	International Rectifier	√										√							
		IRF440	N channel Power MOSFET	International Rectifier	√										√							
		IRFM450	N channel Power MOSFET	International Rectifier	√										√							
		IRF450	N channel Power MOSFET	International Rectifier	√										√							
		IRH450	N channel Power MOSFET	International Rectifier	√										√							
		IRH7450	N channel Power MOSFET	International Rectifier	√											√						
		IRHM7450	N channel Power MOSFET	International Rectifier	√											√						
		IRGAC50U	N channel Power MOSFET	International Rectifier	√										√							
		IRFAG30	N channel Power MOSFET	International Rectifier	√										√							
		IRF130	N channel Power MOSFET	Harris Semiconductor	√										√							
		FRM130	N channel Power MOSFET	Harris Semiconductor	√										√							
		2N6756	N channel Power MOSFET	Harris Semiconductor	√										√							
		FRM140D1	N channel Power MOSFET	Harris Semiconductor	√										√							
		FRM140	N channel Power MOSFET	Harris Semiconductor	√										√							
		FRK150R	N channel Power MOSFET	Harris Semiconductor	√										√							
		FRK160D	N channel Power MOSFET	Harris Semiconductor	√										√							
		FRK160	N channel Power MOSFET	Harris Semiconductor	√										√							
		RFL1P10	P channel Power MOSFET	Harris Semiconductor	√											√						
		2N6849	P channel Power MOSFET	Harris Semiconductor	√											√						
		FRM9140R	P channel Power MOSFET	Harris Semiconductor	√											√						
		FRK9150R	P channel Power MOSFET	Harris Semiconductor	√											√						
		IRF9150	P channel Power MOSFET	Harris Semiconductor	√											√						
		FRK9160	P channel Power MOSFET	Harris Semiconductor	√											√						
		FRK9160R	P channel Power MOSFET	Harris Semiconductor	√											√						
		FRM230R	N channel Power MOSFET	Harris Semiconductor	√										√							
		FRM230	N channel Power MOSFET	Harris Semiconductor	√										√							
		FRK230R	N channel Power MOSFET	Harris Semiconductor	√										√							
		2N6758	N channel Power MOSFET	Harris Semiconductor	√										√							
		2N6798	N channel Power MOSFET	Harris Semiconductor	√										√	√						
		FRM240D1	N channel Power MOSFET	Harris Semiconductor	√										√	√						
		FRK250R	N channel Power MOSFET	Harris Semiconductor	√											√						
		IRF9230	P channel Power MOSFET	Harris Semiconductor	√											√						
		FRM9240R	P channel Power MOSFET	Harris Semiconductor	√											√						
		FRM9250	P channel Power MOSFET	Harris Semiconductor	√											√						
		FRL234R	N channel Power MOSFET	Harris Semiconductor	√										√							
		FRM234	N channel Power MOSFET	Harris Semiconductor	√											√						
		FRK264D	N channel Power MOSFET	Harris Semiconductor	√											√						
		IRHM7360	N channel Power MOSFET	Harris Semiconductor	√										√							
		2N6800	N channel Power MOSFET	Harris Semiconductor	√										√							
		2N6794	N channel Power MOSFET	Harris Semiconductor	√										√							
		2N6802	N channel Power MOSFET	Harris Semiconductor	√										√							
		2N6762	N channel Power MOSFET	Harris Semiconductor	√										√							
		IR450	N channel Power MOSFET	Harris Semiconductor	√										√							
		FRL430D	N channel Power MOSFET	Harris Semiconductor	√										√							
		FRM450R	N channel Power MOSFET	Harris Semiconductor	√											√						
		EN460	N channel Power MOSFET	Harris Semiconductor	√											√						
		TA6768	N channel Power MOSFET	Harris Semiconductor	√											√						
		TA9783	N channel IGBT	Harris Semiconductor	√											√						
15, pp. 55-63	F. Sexton	AD7876	64 k EEPROM	Westinghouse	√						√			√								
		AD7876	12 bit ADC	Analog Devices	√						√			√								
		82C527	Serial Communications Controller	Intel	√						√			√								
7, pp. 64-71	K. LaBel	Mongoose	Microprocessor	LSII Logic	√						√			√								
		AD1671	12 bit ADC	Analog Devices	√						√			√								
		HS26C31	Differential Driver	Harris Semiconductor	√						√			√								
		HS26C32	Differential Receiver	Harris Semiconductor	√						√			√								
		HS2420	Sample and Hold	Harris Semiconductor	√						√			√								
		ODL200 TX	Fiber Optic Transmitter	AT&T	√						√			√								
		ODL200 REC	Fiber Optic Receiver	AT&T	√						√			√								
		Hot Rod TX	Transmitter	Gazelle	√						√			√								
		Hot Rod REC	Receiver	Gazelle	√						√			√								
		HM68512	4 Mbit SRAM	Hitachi	√						√			√								
		HM68128	1 Mbit SRAM	Hitachi	√						√			√								
		EL2243	Operational Amplifier	Elantec	√						√			√								
		HS508RH	Analog Multiplexer	Harris Semiconductor	√						√			√								
		AD676	16 bit ADC	Analog Devices	√						√			√								
		UT63M125	1553 Transceiver	UTMC	√						√			√								
		63125	1553 Transceiver	ILC Data Devices Corp.	√						√			√								
		AX3411	1553 Transceiver	Aeroflex	√						√			√								
		CT1487D	1553 Transceiver	Marconi	√						√			√								
		NHI1500	1553 Transceiver	National Hybrid	√						√			√								
		FC1553921	1553 Transceiver	STC	√						√			√								
		63147	1553 Transceiver	UTMC	√						√			√								
		CT2521	1553 Transceiver	Marconi	√						√			√								
		AX3453	1553 Transceiver	Aeroflex	√						√			√								
		NHI1529	1553 Transceiver	National Hybrid	√						√			√								
		AT22V10	PAL	Atmel	√						√			√								
		IDA07318	Laser Druver	Hewlett Packard	√						√			√								
		LM108	Operational Amplifier	National Semiconductor	√						√			√								
		LM139	Voltage Comaprator	National Semiconductor	√						√			√								
		TSC4429	Power MOSFET Driver	Teledyne	√						√			√								
		CP20420	FPGA	Crosspoint	√						√			√								
		88C20	Driver	National Semiconductor	√						√			√								
		88C30	Receiver	National Semiconductor	√						√			√								
		SPT7922	16 bit ADC	Signal Processing Tech.	√						√			√								
3, pp. 72-77	R. Ecoffet	LM108	Operational Amplifier	Motorola	√							√										
		LM111	Voltage Comaprator	Motorola	√							√										
		LM218H	Operational Amplifier	National Semicondcutor	√							√										
		LM211H	Volatge Comparator	National Semicondcutor	√							√										
17, pp. 78-85	D. Wilson	AD677	16 bit ADC	Analog Devices	√						√			√								
8, pp. 86-96	K. McCarty	CS5327	16 bit ADC	Crystal Semiconductor	√						√			√								
10, pp. 97-103	D. Myers	7845	Voltage Regulator	Lambda Advanced Analog	√		√															
		7846	Voltage Regulator	Lambda Advanced Analog	√		√															
		ART2815T	DC-DC Converter	Lambda Advanced Analog	√		√				√			√					√			
2, pp. 104-109	M. DeLaus	AD8001	Operational Amplifier	Analog Devices	√		√							√								
1, pp. 110-117	W. Combs		CBIC Linear Bipolar Process	AT&T	√		√															

Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.

REDW1993

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Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data: Terrestrial	Data: Flight	Total Ionizing Dose: Co60	Total Ionizing Dose: ELDRS	Total Ionizing Dose: Protons	Total Ionizing Dose: Electrons	Single Event Effects: SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Displacement Damage: Protons	Displacement Damage: Neutrons	Facilities	Standard	Environment
11, pp. 1-12	D. Nichols	80C85RH	Microprocessor	Harris	√						√			√								
		81C55RH	Microprocessor	Harris	√						√											
		SBP9989	Microprocessor	Texas Instruments	√						√											
		80C86-2/B	Microprocessor	Intel	√						√											
		80C86	Microprocessor	Harris	√						√											
		80C86	Microprocessor	Intel	√						√											

M80C186	Microprocessor		√							√											
80C186	Microprocessor	Intel	√							√			√								
MG80C186	Microprocessor	Intel	√							√			√								
MD82510	Microprocessor	Intel	√							√											
1750A	Microprocessor	Performance Semiconductor	√							√											
MA31750	Microprocessor	Marconi Electronic Devices	√							√			√								
MAS281	Microprocessor	Marconi Electronic Devices	√							√											
RTX2010RH	Microprocessor	Harris	√							√			√								
80386	Microprocessor	Adbanced Micro Devices	√							√			√								
80386	Microprocessor	Intel	√										√								
68020	Microprocessor	Motorola	√							√											
R3000	Microprocessor	Performance Semiconductor	√							√			√								
R3000	Microprocessor	Siemens Incorporated	√							√			√								
R3000	Microprocessor	Integrated Device Technology	√										√								
R3000	Microprocessor	LSI logic	√							√			√								
R3000	Microprocessor	NEC	√							√			√								
R3000A	Microprocessor	Integrated Device Technology	√							√			√								
R3000A	Microprocessor	LSI logic	√							√			√								
R3000A	Microprocessor	Performance Semiconductor	√							√			√								
R3000A	Microprocessor	Siemens Incorporated	√							√			√								
82380	DMA Controller	Intel	√							√											
R3010A	Floating Point Unit	Integrated Device Technology	√							√			√								
R3010A	Floating Point Unit	LSI logic	√							√			√								
R3010A	Floating Point Unit	Performance Semiconductor	√							√			√								
R3010A	Floating Point Unit	Siemens Incorporated	√							√			√								
80387-16	Floating Point Unit	Intel	√							√											
68882	Floating Point Unit	Motorola	√							√											
TMS320C25	Digital Signal Processor	Texas Instruments	√							√											
ADFSP2100A	Digital Signal Processor	Analog Devices	√							√			√								
HSRD1056	Resolver to Digital Converter	Natel	√							√			√								
DAC8408	8 bit DAC	Precision Monolithics	√							√			√								
AD558	8 bit DAC	Analog Devices	√							√											
PM7545	12 bit ADC	Precision Monolithics	√							√			√								
DAC8412	12 bit ADC	Precision Monolithics	√							√			√								
AD9048TQ	8 bit ADC	Analog Devices	√							√			√								
MP7684	8 bit ADC	Micro Power Systems	√							√											
AD7824	8 bit ADC	Analog Devices	√							√			√								
AD7672B	12 bit ADC	Analog Devices	√							√											
MX7672	12 bit ADC	Maxim	√							√			√								
MX7572	12 bit ADC	Maxim	√							√											
HI574	12 bit ADC	Harris	√							√			√								
HI674ALD	12 bit ADC	Harris	√							√			√								
HI674SD	12 bit ADC	Harris	√							√			√								
AD574A	12 bit ADC	Analog Devices	√							√			√								
AD674A	12 bit ADC	Analog Devices	√							√			√								
AD674B	12 bit ADC	Analog Devices	√							√			√								
MX674A	12 bit ADC	Maxim	√							√			√								
ADC574A	12 bit ADC	Burr Brown	√							√			√								
ADC674	12 bit ADC	Burr Brown	√							√			√								
AD7872	14 bit ADC	Analog Devices	√							√			√								
HS9575RH	16 bit ADC	Sipex	√							√			√								
54AC708	SRAM	National Semiconductor	√							√											
74AC725	SRAM	National Semiconductor	√							√											
7202RE	SRAM	Intergated Device Technologies	√							√			√								
HC5517A	SRAM	Texas Instruments	√							√											
L6116	SRAM	Logic Devices Incorporated	√							√			√								
CYPC128A	SRAM	Cypress	√							√			√								
HC6116	SRAM	Honeywell	√							√											
HC6216	SRAM	Honeywell	√							√											
HX6364	SRAM	Honeywell	√							√			√								
HC6364	SRAM	Honeywell	√							√											
TS054	SRAM	Harris	√							√											
MA6167	SRAM	Marconi Electronic Devices	√							√											
MA6116	SRAM	Marconi Electronic Devices	√							√											
MA9187	SRAM	Marconi Electronic Devices	√							√											
IBM6401	SRAM	IBM	√							√			√								
EDH8832C	SRAM	EDI Corporation	√							√			√								
MT5C256	SRAM	Micron Technologies	√							√			√								
MT5C2568	SRAM	Micron Technologies	√							√			√								
MT5C2568C	SRAM	Micron Technologies	√							√			√								
MT5C1001	SRAM	Micron Technologies	√							√											
MT5C1008	SRAM	Micron Technologies	√							√			√								
MT5C1008C	SRAM	Micron Technologies	√							√											
HMS65641	SRAM	Matra	√							√			√								
HM65656	SRAM	Matra	√							√											
HM65664	SRAM	Matra	√							√			√								
HM1-65664	SRAM	Matra	√							√											
HM65641	SRAM	Matra	√							√											
TS4H6408	SRAM	Thomson	√							√											
IDT7052	SRAM	Intergated Device Technologies	√							√			√								
IDT7164	SRAM	Intergated Device Technologies	√							√			√								
MCM6226	SRAM	Motorola	√							√			√								
CXK581000P-10L	SRAM	Sony	√							√			√								
CXK581001	SRAM	Sony	√							√			√								
HM628512	SRAM	Hitachi	√							√			√								
EDI41024C100QB	DRAM	EDI Corporation	√							√			√								
MDM110TMB	DRAM	Nippon Electric Company	√							√			√								
MDM1400G	DRAM	Hitachi	√							√			√								
MB814100-10PSZ	DRAM	Fujitsu	√							√			√								
HM514100ZP8	DRAM	Hitachi	√							√			√								
MT4C1004C	DRAM	Micron Technologies	√							√			√								
MT4C4001	DRAM	Micron Technologies	√							√			√								
D424100V-80	DRAM	Nippon Electric Company	√							√			√								
KM41C4000Z-8	DRAM	Samsung	√							√			√								
HYB514100J-10	DRAM	Siemens Incorporated	√							√			√								
TMS44100DM-80	DRAM	Thomson	√							√			√								
TC514100Z-10	DRAM	Toshiba	√							√			√								
P10C68	RAM Non-volatile	Plessey Semiconductor	√							√											
FMX1408	FRAM	Ramtron	√							√											
FMX1208	FRAM	Ramtron	√							√			√								
28HC256	EEPROM	SEEQ Technologies	√							√			√								
28HC256	EEPROM	Atmel	√							√											
DM28C256	EEPROM	SEEQ Technologies	√							√			√								
28C256	EEPROM	SEEQ Technologies	√							√			√								
CY7C261-55	EEPROM	Cypress	√							√			√								
WSF57C49B	EEPROM	Waferscale	√							√			√								
HM6617	PROM	Harris	√							√			√								
R29793DM	PROM	Raytheon	√							√			√								
82HS641A	PROM	Signetics	√							√			√								
82HS641A	PROM	Signetics	√							√			√								
UT1553	Bus Controller	UTMC	√							√			√								
TC02	MACS Bus Controller	Matra	√							√			√								
	Bus Controller ASIC	Matra	√							√			√								
	Serial Controller ASIC	Matra	√							√			√								
ULA5N104	ASIC	Ferranti	√							√			√								
MC5000	Gate Array	Matra	√							√			√								
HR1060	Gate Array	Honeywell	√							√			√								
XC3090	FPGA	Xilinx	√							√			√								
A1280	FPGA	Actel	√							√			√								
LRH10038Q	PPGA	LSI Logic	√							√			√								
HP03	PPGA	UTMC	√							√			√								
RA20K	PPGA	UTMC	√							√			√								
EP310	Programmable Logic Device	Alterra	√							√											
EP600	Programmable Logic Device	Alterra	√							√											
20RA10Z	Programmable Logic Device	SEEQ Technologies	√							√			√								
22V10C-10	PAL	Cypress	√							√			√								
22V10D-15DMB	PAL	Cypress	√							√			√								
22V10B	PAL	Cypress	√							√			√								
22V10	PAL	Cypress	√							√			√								
22V10	PAL	Cypress	√							√			√								
22V10A	PAL	Advanced Micro Devices	√							√			√								
22V10A	PAL	Texas Instruments	√							√			√								
IDT49C460	EDAC	Integrated Device Technology	√							√			√								
	EDAC	Advanced Micro Devices	√							√			√								
54LS630	EDAC	Texas Instruments	√							√			√								
54LS74A	D Flip Flop	Texas Instruments	√							√			√								
MC10531	D Flip Flop	Motorola	√							√			√								
54LS112	JK Flip Flop	Motorola	√							√											
555	Timer	National Semiconductor	√							√											
555	Timer	Signetics	√							√											
54ACT163	Counter	Motorola	√							√			√								
54ACT374	D Flip Flop	Motorola	√							√			√								
54ACTQ373	D Latch	National Semiconductor	√							√			√								
54HCT373	Latch	Texas Instruments	√							√			√								
54HCT393	Counter	Harris	√							√			√								
PWM1526	Pulse Width Modulator	Silicon General	√							√			√								
64500/1	Microprocessor	LSI Logic	√							√											
68020	Microprocessor	Motorola	√							√											
HS82C88	Bus Controller	Harris	√							√											
HS82C59A	Priority Interupt Controller	Harris	√							√											
HS82C52	Serial Controller	Harris	√							√											
R3000	Microprocessor	Integrated Device Technology	√							√											
R3000A	Microprocessor	Integrated Device Technology	√							√											
R30000A	Microprocessor	Performance Semiconductor	√							√											
R3000	Microprocessor	LSI Logic	√							√											
L64801	Microprocessor	LSI Logic	√							√											
L64811	Microprocessor	LSI Logic	√							√											
L64814	Floating Point Unit	LSI Logic	√							√											
T800	Transputer	INMOS Corporation	√							√											
WE-DSP32C	Digital Signal Processor	AT&T	√							√											
320C25	Digital Signal Processor	Texas Instruments	√							√			√								
320C25	Digital Signal Processor	Texas Instruments	√							√											
320C30	Digital Signal Processor	Texas Instruments	√							√											
320C50	Digital Signal Processor	Texas Instruments	√							√											
56001	Digital Signal Processor	Motorola	√							√											
ADSP2100A	Digital Signal Processor	Analog Devices	√							√											
ADSP2100	Digital Signal Processor	Analog Devices	√							√											
ADSP2100	Digital Signal Processor	Analog Devices	√							√											
AM29CEPL154	Microprocessor	Advanced Micro Devices	√							√											
68881	Coprocessor	Motorola	√							√											
68882	Coprocessor	Motorola	√							√											
80387	Coprocessor	Intel	√							√											
80387-16	Coprocessor	Intel	√							√											
80387	Coprocessor	Intel	√							√											
MP7684	8 bit ADC	Micropower Systems	√							√											
MP7684A	8 bit ADC	Micropower Systems	√							√											
TMS8338	8 bit ADC	Thomson	√							√											
MP7695	10 bit ADC	Thomson	√							√											
ADC87	12 bit ADC	Burr Brown	√							√											
ADC85	12 bit ADC	Sipex	√							√											
SP7800	12 bit ADC	Sipex	√							√											
LTC1272	12 bit ADC	Linear Technology	√							√											
HI774B	12 bit ADC	Harris	√							√											
ADS112	12 bit ADC	Datel	√							√											
CS5016	16 bit ADC	Crystal Semiconductor	√							√											
AD7533	10 bit ADC	Analog Devices	√							√											
MP7533	10 bit ADC	Micropower Systems	√							√											
SQR7541	12 bit ADC	SOREP	√							√											
7134RT	FIFO	Integrated Device Technology	√							√											
7202RT	FIFO	Integrated Device Technology	√							√											
7202RE	FIFO	Integrated Device Technology	√							√											
M67202	FIFO	Matra	√							√											
CYC185	SRAM	Cypress	√							√											
HM65641	SRAM	Matra	√							√											
HM65664	SRAM	Matra	√							√											
HM65656	SRAM	Matra	√							√											
D4464D	SRAM	Nippon Electric Company	√							√											

		MT5C1608	SRAM	Micron Technologies	√						√												
		MT5C2568	SRAM	Micron Technologies	√						√												
		MT5C1008CW	SRAM	Micron Technologies	√						√												
		DPS92256G	SRAM	Hitachi	√						√												
		MT4C1004C	DRAM	Micron Technologies	√						√												
		R29793	SROM	Raytheon	√						√												
		X29C256	EEPROM	Xicor	√						√												
		28C256	EEPROM	SEEQ Technologies	√						√												
		28C64	EEPROM	SEEQ Technologies	√						√												
		MB7144E	PROM	Fujitsu	√						√												
		1020A	FPGA	Texas Instruments	√						√												
		MC5000	Gate Array	Matra	√						√												
		MA805	1553 Bus Controller	Marconi Electronic Devices	√						√												
		TMC2210	Multiplier/Accumulator	TRW	√						√												
		ATW28XX	DC-DC Converter	Advanced Analog	√						√												
		26C31	Differential Driver	Harris	√						√												
		26C31	Differential Driver	National Semiconductor	√						√												
		26C32	Differential Receiver	Harris	√						√												
		26C32	Differential Receiver	National Semiconductor	√						√												
		LTC485CN8	Transceiver	Linear Technology	√						√												
		DG271	Analog Switch	Siliconix	√						√												
		DG300	Analog Switch	Siliconix	√						√												
		DG601AK	Analog Switch	Siliconix	√						√												
		IH6208	Analog Multiplexer	Harris	√						√												
		LTC1064	Low Pass Filter	Linear Technology	√						√												
		54ACTQ244	Logic	National Semiconductor	√						√												
		P54PCT245	Logic	Performance Semiconductor	√						√												
		25HCT04	SAR	Zyrel	√						√												
4, pp. 13-19	F. Estreme	90C601	Integer Unit	MHS	√						√			√									
		90C602	Floating Point Unit	MHS	√						√			√									
		L64811	Integer Unit	LSI logic	√						√			√									
		L64814	Floating Point Unit	LSI logic	√						√			√									
2, pp. 20-26	J. Beaucour	ACT1020	FPGA	Actel	√						√			√									
		CY7C601	Microprocessor	Cypress	√									√									
		CY7C602	Floating Point Unit	Cypress	√									√									
		CY7C604	Memory Management Unit	Cypress	√									√									
		D469AAP	Power MOSFET Driver	Siliconix	√									√									
		HM628128	1M bit SRAM	Hitachi	√									√									
		L64730	DCT processor	LSI logic	√									√									
		L64801	Microprocessor	LSI logic	√									√									
		L64811	Microprocessor	LSI logic	√									√									
		L64814	Floating Point Unit	LSI logic	√									√									
		MT5C1008CW	1M bit SRAM	Micron	√									√									
		SMJ44C251	Multiport Video RAM	Texas Instruments	√						√			√									
		TIBPAL16R8	PAL	Texas Instruments	√						√												
		TIBPAL22V10	PAL	Texas Instruments	√						√												
		TLC555M	Timer	Texas Instruments	√									√									
		TPC1020	FPGA	Texas Instruments	√						√			√									
6, pp. 27-32	K. LaBel		RS Encoder	UTMC/NASA	√						√			√									
		UT1256	32k x 8 SRAM	UTMC	√						√			√									
		Hot Rod	High Speed Tx/Rx Pair	Gazelle	√									√									
		22V10	PAL	Cypress	√									√									
		Alpha	Microprocessor	Digital Equipment Corporation	√									√									
		TAXI	High Speed Tx/Rx Pair	Adbanced Micro Devices	√									√									
		7202RE	FIFO	IDT	√						√			√									
		HM628512	4 Mbit SRAM	Hitachi	√						√			√									
		CS5327	16 bit ADC	Crystal Semiconductor	√						√			√									
		EMXO	Temperature Controller	Ball Efatrom	√						√			√									
1, pp. 33-35	J. Barak	PAL16R8BMJ/883B	PAL	Adbanced Micro Devices	√						√												
3, pp. 36-42	S. Duzellier	STK10C68	8k x 8 NVRAM	Simtek	√						√												
		MT5C1001	1M x 1 SRAM	Micron	√						√												
		MT5C1008	128k x 8 SRAM	Micron	√						√												
		MT5C1009	128k x 8 SRAM	Micron	√						√												
		62256R	32k x 8 SRAM	Hitachi	√						√												
		62382H	32k x 8 SRAM	Hitachi	√						√												
		628128R	128k x 8 SRAM	Hitachi	√						√												
		CXK581001	128k x 8 SRAM	Sony	√						√												
		CXK581000	128k x 8 SRAM	Sony	√						√												
		D431000	128k x 8 SRAM	NEC	√						√												
		D43256	32k x 8 SRAM	NEC	√						√												
		CXK58257	32k x 8 SRAM	Sony	√						√												
		HM65656	32k x 8 SRAM	MHS	√						√												
		IDT7134	4k x 8 DRAM	IDT	√						√												
		MT4C4001	1M x 4 DRAM	Micron	√						√												
		01G9274	1M x 4 DRAM	IBM	√						√												
		SMJ44100	4M x1 DRAM	Texsas Instruments	√						√												
12, pp. 43-50	D. Oberg	87C51FC	Microcontroller	Intel	√						√			√									
17, pp. 51-55	D. Wiseman	Custom	Various Test Structures on CMOS34	Hewlett Packard	√						√			√									
10, pp. 56-63	T. Miller	KAF-0400	CCD	Kodak	√		√												√				
			CCD Test Structure	Kodak	√		√												√				
9, pp. 64-76	D. Meshel	ODL 250	Fiber Optic Transmitter Module	AT&T	√							√											
			Fiber Optic Receiver Module	AT&T	√							√											
7, pp. 77-84	K. LaBel		256 kbit SRAM	Hitachi	√	√					√												
15, pp. 85-92	C. Underwood	HC6281128	128k x 8 SRAM	Hitachi	√	√					√												
		D43256AGU-10L	128k x 8 SRAM	NEC	√	√					√												
		D431000GW-10L	128k x 8 SRAM	NEC	√	√					√												
		CXK581000M-10L	128k x 8 SRAM	Sony	√	√					√												
		CXK51000	128k x 8 SRAM	Sony	√	√					√												
		CXK58257AM-70L	128k x 8 SRAM	Sony	√	√					√												
14, pp. 93-98	A. Soubeyran		Deep Dielectric Charging Simulation																		√		
5, pp. 99-106	Q. Kim	HC6364	64k SRAM	Honeywell	√						√												
		IBM6401CRH	64k SRAM	IBM	√						√												
16, pp. 107-111	B. Weaver		Microstrip Resonator		√														√				
			SQUID		√														√				
8, pp. 112-117	C. Lee	AD674A	12 bit ADC	Analog Devices	√		√																
		AD674B	12 bit ADC	Analog Devices	√		√																
		MX7672	12 bit ADC	Maxim	√		√																
		MX674A	12 bit ADC	Maxim	√		√																
13, pp. 118-120	M. Shoga	AD9048TQ	8 bit ADC	Analog Devices	√									√									

Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.

REDW1992

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Paper No., Page No.	First Author	Part No.	Type	Manufacture	Data		Total Ionizing Dose				Single Event Effects							Displacement Damage		Facilities	Standard	Environment
					Terrestrial	Flight	Co60	ELDRS	Protons	Electrons	SEU	SET	SEFI	SEL	SEB	SEGR	Dose Rate	Protons	Neutrons			
8, pp. 1-11	K. LaBel	80386		Intel	√						√			√			√					
		80387		Intel	√						√			√								
		Custom	Bus Controller	Matra	√						√			√								
		Custom	Serial Controller	Matra	√						√			√								
		82HS641A	PROM	Signetics	√						√			√								
		DQ28C256	EEPROM	SEEQ	√						√			√								
7, pp. 12-15	J. Kinnison	P1750AS-25QGM	Microprocessor																			
		P1753S-25QGN	Memory Management Unit																			
		P1754S-25QGM	Processor Interface Circuit																			
		RTX2010RH	Microprocessor	Harris Semiconductor	√						√			√								
		54AC708	64 x 9 bit FIFO	National Semiconducotr	√						√			√								
		54AC725	512 x 9 bit FIFIO	National Semiconducotr	√						√			√								
			Gate Array	UTMC	√						√			√								
		2N6802	Power MOSFET	Intermational Rectifier	√										√							
		320C25	Digital Signal Processor	Texsas Instruments	√						√			√								
		7202RT	4k x 8 bit FIFO	IDT	√						√			√								
		7134RT	4k x 8 bit Dual Port RAM	IDT	√						√			√								
13, pp. 16-20	R. Velazco	MC68020	Microprocessor	Motorola	√						√			√								
		MC68882	Floating Point Unit	Motorola	√						√			√								
		90C601	Microprocessor		√						√			√								
		90C602	Floating Point Unit		√						√			√								
3, pp. 21-26	C. Dufour	54LS630	EDAC	Texsas Instruments	√						√			√								
		54LS74A	Octal D Type Latch	Texsas Instruments	√						√			√								
		82HS641	64k bit PROM	Signetics	√						√			√								
		ADSP2100	Digital Signal Processor	Analog Devices	√									√								
		ADSP2100A	Digital Signal Processor	Analog Devices	√									√								
		CY7C261-55	64k bit EPROM	Cypress	√						√			√								
		DG271	Analog Switch	Siliconix	√									√								
		DG300	Analog Switch	Siliconix	√									√								
		HM65664	64k bit SRAM	MHS	√									√								
		HM6617	64k bit PROM	Harris Semiconductor	√						√			√								
		IRF450	Power MOSFET	International Rectifier	√									√								
		IRF350	Power MOSFET	International Rectifier	√									√								
		L64730	DCT Processor	LSI Logic	√						√			√								
		L64801	Microprocessor	LSI Logic	√									√								
		L64811	Microprocessor	LSI Logic	√									√								
		L64814	Floating Point Unit	LSI Logic	√									√								
		M65656	256k bit SRAM	MHS	√									√								
		M67202	1k x 9 bit FIFO	MHS	√									√								
		MA805	1553 Bus Controller	MAR	√									√								
		MACSTC02	MACS Bus Controller	MHS	√						√			√								
		MB500	ASIC	MHS	√						√			√								
		MB7144E	64k PROM	Fujitsu	√									√								
		MC10531	Dual D Type Latches	Motorola	√						√			√								
		MC5000	35k Gate Array	MHS	√									√								
		MC54ACT163	4 bit Binary Counter	Motorola	√						√			√								
		MC54ACT374	Octal D Type Latch	Motorola	√						√			√								
		MT5C1008CW	1M bit SRAM	Microm	√									√								
		MT5C2568C	256k bit SRAM	Microm	√						√			√								
		R29793DM	64k bit PROM	Raytheon	√						√			√								
		SBP9989-D	Microprocessor	Texsas Instruments	√						√			√								
		SPR7541	12 bit DAC	SOR	√									√								
		T800	Transputer	InMOS	√									√								
		TMC2210	Multiplier Accumualtor	TRW	√									√								
		TMC320C25	Digital Signal Processor	Texsas Instruments	√						√			√								
		TMS320C25	Digital Signal Processor	Texsas Instruments	√						√			√								
		ULA-5N104	OBDH Bus Controller	Ferranti	√						√			√								
		WSF57C49B	64k EPROM	WAF	√						√			√								
4, pp. 27-33	R. Ecoffet	MT5C1001	1 Mbit SRAM	Micron	√						√											
		MT5C1008	128k x8 SRAM	Micron	√						√											
		HM65656	32kx8 SRAM	Matra	√						√											
		HM65654	8kx8 SRAM	Matra	√						√											
		HM65641	8kx8 SRAM	Matra	√						√											
		TS4H6408	8kx8 SRAM	Thomson-TMS	√						√											
		P10C68	8kx8 NovRAM	Plessey	√						√											
		DM28HC256	8kx8 EEPROM	SEEQ	√						√											
		AT28HC256	32kX8 EEPROM	Atmel	√						√											
		X28C256	32kx8 EEPROM	Xicor	√							√										
5, pp. 34-41	R. Harboe-Sorensen	IDT79R300-256	Microprocessor	IDT	√		√				√											
		LR3000GC-25	Microprocessor	LSI Logic	√		√				√											
		PR3000-25PGC	Microprocessor	Performance Semiconductor	√		√				√											
		R3000-25-A	Microprocessor	Siemens	√		√				√											
		D30300R-25	Microprocessor	NEC	√		√				√											
		IDT79R3000AE	Microprocessor	IDT	√		√				√											
		LR3000AHC-25	Microprocessor	LSI Logic	√		√				√											
		PR3000A-25PGC	Microprocessor	Performance Semiconductor	√		√				√											
		R3000A-33-AE	Microprocessor	Siemens	√		√				√											
		IDT79R3010AE-25G	Microprocessor	IDT	√		√				√											
		LR3010AHC-25	Microprocessor	LSI Logic	√		√				√											
		PR3010A-25PGC	Microprocessor	Performance Semiconductor	√		√				√											
		R3010A-33-A	Microprocessor	Siemens	√		√				√											
2, pp. 42-47	M. Bumbaugh	X28256	32kx8 EEPROM	Xicor	√		√										√					
		X28C256	32kx8 EEPROM	Xicor	√		√										√					
		AT28C256	32kx8 EEPROM	Atmel	√		√										√					
		DQ28C256	32kx8 EEPROM	SEEQ	√		√										√					
		CM28HC256	32kx8 EEPROM	SEEQ	√		√										√					
9, pp. 48-52	C. Lee	HSRD 1056RH	Resolver to Digital Converter	Natel	√		√															
12, pp. 53-57		54AC00	NAND Gate	National Semiconductor	√		√															
		54AC02	NOR Gate	National Semiconductor	√		√															
		54AC04	HEX Inverter	National Semiconductor	√		√															

		54AC08	NAND Gate	National Semiconductor	√		√															
		54ACTQ08	NAND Gate	National Semiconductor	√		√															
		54AC11	AND Gate	National Semiconductor	√		√															
		54AC14	HEX Inverter	National Semiconductor	√		√															
		54AC20	NAND Gate	National Semiconductor	√		√															
		54AC32	OR Gate	National Semiconductor	√		√															
		54AC74	D-Flip-Flop	National Semiconductor	√		√															
		54ACT74	D-Flip-Flop	National Semiconductor	√		√															
		54AC86	OR Gate	National Semiconductor	√		√															
		54AC109	JK-Flip-Flop	National Semiconductor	√		√															
		54AC138	Decoder	National Semiconductor	√		√															
		54ACT138	Decoder	National Semiconductor	√		√															
		54AC139	Decoder	National Semiconductor	√		√															
		54AC151	Multiplexer	National Semiconductor	√		√															
		54AC153	Multiplexer	National Semiconductor	√		√															
		54AC157	Multiplexer	National Semiconductor	√		√															
		54ACT157	Multiplexer	National Semiconductor	√		√															
		54AC161	Counter	National Semiconductor	√		√															
		54AC191	Counter	National Semiconductor	√		√															
		54ACT240	Buffer	National Semiconductor	√		√															
		54ACT244	Buffer	National Semiconductor	√		√															
		54AC245	Transceiver	National Semiconductor	√		√															
		54ACT245	Transceiver	National Semiconductor	√		√															
		54ACT373	Octal Latch	National Semiconductor	√		√															
		54ACTQ374	Octal Latch	National Semiconductor	√		√															
		54ACTQ374	D-Flip-Flop	National Semiconductor	√		√															
		54AC521	D-Flip-Flop	National Semiconductor	√		√															
10, pp. 58-66	M. Maher	54AC00		National Semiconductor	√		√															
		54AC02		National Semiconductor	√		√															
		54AC04		National Semiconductor	√		√		√													
		54AC08		National Semiconductor	√		√															
		54AC10		National Semiconductor	√		√															
		54AC20		National Semiconductor	√		√															
		54AC32		National Semiconductor	√		√															
		54AC74		National Semiconductor	√		√															
		54AC86		National Semiconductor	√		√															
		54AC138		National Semiconductor	√		√															
		54AC151		National Semiconductor	√		√															
		54AC161		National Semiconductor	√		√															
		54AC240		National Semiconductor	√		√															
		54AC244		National Semiconductor	√		√															
		54AC245		National Semiconductor	√		√															
		54AC273		National Semiconductor	√		√															
		54AC373		National Semiconductor	√		√															
		54ACT00		National Semiconductor	√		√															
		54ACT109		National Semiconductor	√		√															
		54ACT138		National Semiconductor	√		√															
		54ACT151		National Semiconductor	√		√															
		54ACT153		National Semiconductor	√		√															
		54ACT175		National Semiconductor	√		√															
		54ACT244		National Semiconductor	√		√															
		54ACT245		National Semiconductor	√		√															
		54ACT273		National Semiconductor	√		√															
		54AC373		National Semiconductor	√		√															
		54ACT521		National Semiconductor	√		√															
		54ACT825		National Semiconductor	√		√															
		54AC249		National Semiconductor	√						√						√					
		54AC163		National Semiconductor	√						√											
		54AC174		National Semiconductor	√						√											
		54AC374		National Semiconductor	√						√											
		54ACT174		National Semiconductor	√						√											
		54ACT373		National Semiconductor	√						√											
11, pp. 67-71	A. Owens	Test circuits	1µm CMOS Gate Array	LSI Logic	√		√				√				√			√				
1, pp.72-81	R. Brown		32kx8 SRAM	IBM Federal Systems	√		√				√				√			√				
			256kx1 SRAM	IBM Federal Systems	√		√				√				√			√				
6, pp. 82-86	G. Hash		Nuclear Event Detector	Harris Semiconductor																		

Once the paper with the response data required has been located it is the radiation effects engineer's responsibility to perform a detailed review to establish applicability.